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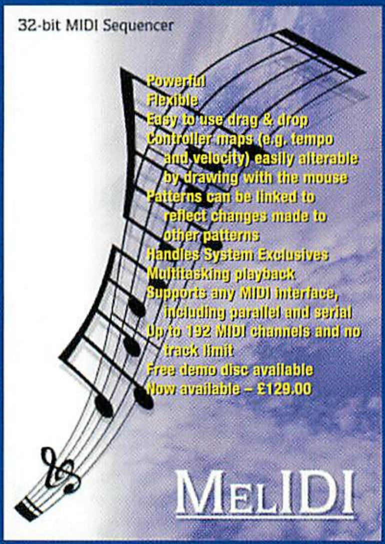


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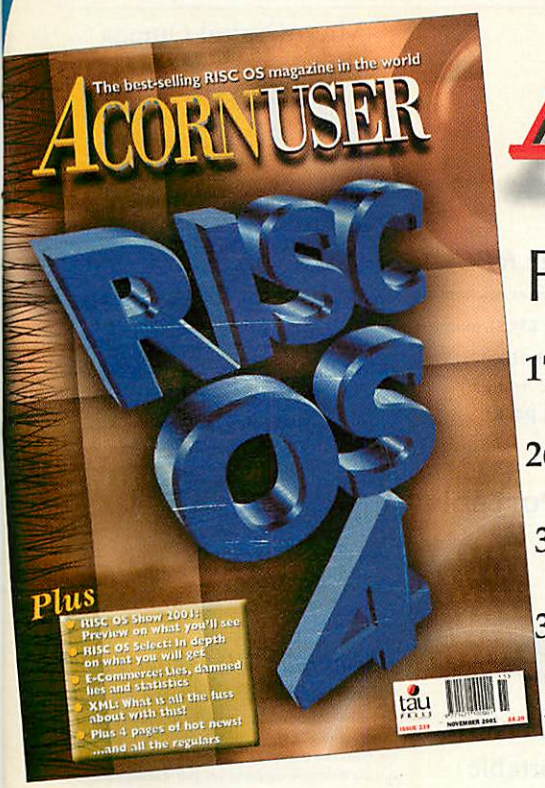
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contents

November 2001

ACORNUSER



Features

Regulars

December 2001 issue on sale 1st November 2001



I thought you might like to know the progress of the Microsoft licensing battle. A lot of major companies have complained to Microsoft about it, it is patently obvious to everyone that it is an abuse of their position, and the company has given a few more months leeway in the change over.

Quite simply Microsoft are the major supplier of operating systems and application software to businesses. The new "subscription" system to be imposed would increase costs for business from 30% to 130% by forcing companies to upgrade far more frequently than they would normally.

The reason for Microsoft wanting the change is clear enough: The PC market has reached saturation and most businesses see no point in upgrading systems that work to software that they know is going to be full of bugs and cause more trouble than the upgrade will be worth. In the US the position is already serious wth sales drying up almost completely, we are perhaps three years behind, maybe less.

There are several strategies companies can adopt to avoid the new subscription scheme but they all end up in either dead-ends or far more cost later on. One option however that does neither of these is the choice of alternative software. Though naturally most companies are loathe to do this because of the potential difficulties.

However there is one other interesting viewpoint: Governments should stay out of this (the US and UK governments particularly who think perhaps they should legislate against Microsoft) and just let Microsoft get on with it. Why? Because they are shooting themselves very thoroughly in the foot. They will force people to migrate away from their products because of the increased cost and thus fail.

Ultimately time will tell but, of course, there is yet another option which they could adopt: Leave the hardware behind as well and try something completely untainted by Microsoft's monopoly. It's a thought.

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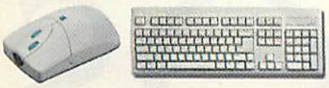
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Friends of RISC OS

The Wakefield Acorn User Group are starting their winter season with A First Look at Omega on Wednesday 7th November 2001 — with David Atkins (MicroDigital).

Their December (5th — Bring and Buy Auction) and January (2nd — AGM and presentations of PD software) meetings follow a standard pattern then on 6th February Chris Morison will be showing off his *Organizer* program.

The ICENI Computer Club meets in the Co-Op Education Centre, Fore Street, Ipswich IP4 1JW (not too far from the junction of the A12 and A14) from 7pm on the evening of the first Wednesday of each month.

Forthcoming events are:

3rd October 2001 — A talk on CGI scripting by Paul Moore

7th November 2001 — (provisional) Computer Security/Encryption

5th December 2001 — Christmas party, Auction and games

2nd January 2002 — Pub social evening, details TBA

6th February 2002 — Talk by Paul Beverley of Archive Magazine — topic TBA

3rd April 2002 — AGM plus other attractions!

For more details on the club, see the Web site at **www.iceni-computer-club.org.uk** or contact the Chairman, Peter Dunn on 01473 728 881 or as **peter.L.dunn@btinternet.com**

The RISC OS User Group of London continues to arrange a wide variety of RISC OS related events in venues in central London, and sometimes not-so-central London! (Meetings have thus far been held in the West End, at Euston, at Waterloo, at the Elephant and Castle, in Surbiton and in Harlow).

Membership is free, so that you can sign up to receive e-mail notification of pending meetings (which are often quite short notice) without needing to commit yourself.

ROUGOL usually organise meetings at the last minute, but on this one occasion they've received details in advance.

Neil Farnham-Smith of Surftec will be visiting ROUGOL on Wednesday 10th October at 7:30pm, to talk about and demonstrate their wide range of RISC OS products and services.

The venue will be the upstairs room of the Blue Posts pub, at the junction of Broadwick St and Berwick St in the West End. Equidistant between Tottenham Court Road, Oxford Circus, Piccadilly Circus and Leicester Square tube stations, it couldn't be easier to reach by public transport!

For more information, e-mail **info@rougol.jellybaby.net** or see the Web site at **www.jellybaby.net/rougol**

As with ROUGOL the Manchester Acorn User Group (MAUG) has no membership fee and is usually equally late with its announcements. Certainties include its meeting dates, every 3rd Wednesday of the month; its (new) venue, Metrovick Rugby Club, Sale; and its welcome — friendly. **www.acorn.manchester.ac.uk**

Not to be confused with ROUGOL is ROUGoI. The last letter is an I and this is the RISC OS User Group of Ireland.

I don't know about their meetings but they have set up a mailing list for members so if you live in the Republic or Northern Ireland you may wish to apply to join their list by sending an e-mail message to **rougoi@eircom.net**

No news is good news?

As a news item this is a total failure. It's at least two years old and it's something that is well known. Except that when I mentioned it recently to someone I thought understood the RISC OS business he was astounded. I tested others and so far I seem to be the only one in the know. No, I don't really believe that either — so apologies in advance if this is old news for you.

We've all been waiting, patiently or otherwise, for many months while one company produces a piece of new hardware. Elsewhere, for lack of funding, another company has had a prototype languishing. It too would have the capacity for running 26-bit software and I've heard quoted a guesstimate of it running at something like 8 times the speed of my StrongARM Risc PC. It too would use X-Scale when available and then run old 26-bit software in emulation; emulation can be slow so that might only be up to 4 times the speed of what I now find satisfactory.

Surprisingly it wouldn't cost millions of pounds (like Phoebe) but more like tens of thousands for a production version to evolve from its present prototype and be out on the streets.

Of course you all know this. It's old news.

I just thought that someone new to RISC OS machines might be reading this column. If that's you and you're able to start the ball rolling by putting in a large order for some remarkable machines then I know of one or two (at least) companies who would like to hear from you.

Start'em right

It's certainly true that many schools in the UK have moved over to using Windows computers as an alternative to RISC OS machines. It's just as true that RISC OS computers can be used to teach the full curriculum, in most cases far better than the Windows replacement. We've heard of numerous cases where 10 year old Archimedes machines have been compared to brand new Windows PCs prior to schools deciding for the latter.

A new company, Melotech, is carrying out research relating to the use of RISC OS systems in schools in the United Kingdom and I know they'll hear stories of profligate use of our money. However Melotech aren't looking at the past; they're concerned that mistakes are put right in the future.

RISC OS hardware and software development is continuing and there is no need for schools to take the expensive and often anti-educational Microsoft alternative.

Melotech are undertaking research to determine:

• What software is available for education;
• Which parts of the National Curriculum it covers;
• Whether the software is in development any more;
• Whether the software house is committed to future RISC OS development;
• Whether the software house would develop in the future should RISC OS sales in schools rise appropriately or Government policy changed.

The last will puzzle readers outside the UK. Surely in no other country would the government encourage the public purchase of foreign goods in preference to equivalent (arguably better) goods designed and produced in the home country.

Melotech are asking software developers and teachers to answer the issues above. Software developers are asked to e-mail their responses and attach company logos (preferably in vector format) for the resulting literature documenting the results. Teachers are asked to also supply their knowledge of the pros and cons of using RISC OS in education. Melotech are asking for information about all software — freeware or commercial.

I'll certainly be sending my observations together with schemes of work that provided an exciting and open-ended curriculum in schools but lost in its translation to the more limited scope of a Windows solution.

This is an important initiative. Some people have written off RISC OS in the education market but that ignores its superiority over other platforms in many ways peculiar to education.

If you want to take part please send your contributions to **sales@melotech.co.uk**

Acorn User will hope to publish results from the research but in the meantime we would like to hear directly of particularly interesting uses of RISC OS in the classroom. Send your comments on this to **news@acornuser.com**

...and thanks for all the fish

Should any of you have friends using Apple machines they will be delighted to learn that *EasiWriter* is likely to be released soon by Icon Technology in an upgraded form as *MacAuthor*. This is the original name that was used before the program was ported many years ago to RISC OS as *EasiWriter*.

MacAuthor had an excellent reputation and was used by the late Douglas Adams for example. RISC OS users will be pleased to learn that the new move is not the case of a well-known RISC OS developer leaving our market. Side by side with the new Apple version has been the RISC OS equivalent and once *MacAuthor* has been successfully launched we can look forward to a new version of *EasiWriter*. In the meantime the current versions of *EasiWriter* and *TechWriter* can be obtained from the publishers who are still offering excellent discounts on upgrades from older versions and from the version bundled with most new RISC OS machines.

The official launch was intended to be the Mac Expo which takes place annually in Paris around the end of September. Unfortunately the tragic events in the USA resulted in the event being cancelled.

Icon Technology have developed the new program in association with another company long associated with the Acorn educational market: Kudlian Soft. The two companies are now re-organising the launch.

Short stuff

Not quite as far back a Babbage but the next step in the history of computing is generally considered to be in tackling the Enigma. The modern computer was produced to solve a problem: coded messages. It was at Bletchley Park, Station X, where a computer was devised to read German codes during World War 2. Many of those coded messages were produced by the Enigma machine and you can see the problems encountered at Station X with a rather excellent simulator of the Enigma machines themselves.

Simulations of various Enigma machines are included in a program by Paul Reuvers of X-Ample Technology together with lots of explanatory material. They are available free (at the moment) from **www.xat.nl/enigma**

The picture is of a Naval M3 machine an example of which is on display at the Bletchley Park exhibition. The graphics for this simulation was produced entirely on a Risc PC using *Paint*, *Draw*, *ArtWorks* and *Photodesk* and the whole simulation is quite simply stunning.

Using those Extra Keys

Last month I asked our expert — Mike Cook of RISC OS Rambles — about using the extra keys that I'm stuck with because I bought a standard IBM keyboard to replace the one that came with my Risc PC. The extra keys, on the bottom row, have specific uses with another system but I thought I could make good use of them using my superior hardware.

Mike gave the techie answer (as intended) but there will be non-techies out wanting to use those keys for themselves. Steve Fryatt seems to have provided the answer with a new utility called Windows Keys which is available from his site at:

www.stevefryatt.org.uk/software/utils/

You'll notice that I've left you guessing as to whether I've already implemented Mike's solution and don't need to make use of the non-techie solution.

Standing Ovation

Having whet the appetite of *EasiWriter* users here's news for those who prefer the other big RISC OS DTP program. David Pilling is continuing his upgrade of *Ovation Pro* and version 2.66 is now available from:**www.davidpilling.net/ovationpro/upgrade/op266.zip**

The upgrade will only work with version 2.60 or later and those with an earlier version should contact David to purchase the upgrade to 2.60. As a satisfied user I can strongly recommend the move.

David is also selling copies of a manual for the Script Language used within *Ovation Pro*. This is aimed at programmers and the manual is available for £5.

David has also produced upgrades to many of his programs, including *ImageMaster* and *Snapper*, and details and the upgrades themselves are available at **www.davidpilling.net/up.html**

Dug up for Archiology

I do hope our editor doesn't mis-correct the title. Michael Gilbert has produced a site to store the contents of discs that were supplied with what are now old RISC OS machines. Mike thought he had found a good name for the site as most of the discs are for Archi-medes machines. Imagine the groan when he discovered other sites spelling archiology to mean the sort of thing Time Team does.

At least the site **www.eclipse.co.uk/gilberts/archiology** is now available to you if you want to resurrect an old Acorn machine and want the contents of the original discs to go with it. mike is also adding various test and developers discs to the Acorn relics.

Browse among the nettles

Suddenly RISC OS seems to be the recipient of lots of gifts from the world of UNIX. Perhaps most conspicuous (so far) is the launch of a new browser, complementing a new telnet client.

Lynx is a Unix text-based browser and the telnet client is *Nettle*. Other programs have been released at the same time and *Nettle* is required for them to run properly. How great an effect they will have on RISc OS is up to you.

They may require greater understanding to get them working than most programs but, even though it's only text based, *Lynx* can apparently access some sites that would otherwise be blocked to RISC OS users. If you want to explore the programs and explanations can be found at **http://nettle.sourceforge.net/** and **www.chocky.org/unix/**

In brief

Ariadne?

Labyrinth is a RISC OS port of the Acornsoft game Labyrinth for the BBC Micro. There is no sound in this version but it's otherwise complete. Labyrinth 0.50 is available now, from the 'Software' section of **www.inter.nl.net/users/J.Kortink**

RiscStation Mice

CTA have announced that they are selling Optical Wheel mice for all PS2 machines. The same mice are now included as standard on the RiscStation+ and Scorcher machines. Schools (or possibly anyone else) who purchase 10 or more basic RiscStations will also be supplied with the new mice.

CTA Direct 01942 797777
RiscStation 01942 797766

Exhibintg pictures

If you wish to produce an easily accessed display of pictures a new utility will turn a directory of images into a Web site. Dave Stratford has produced WebGen which will cope with Sprites, TIFFs, JPEGs, BMP and GIFs. It's a new program under development so presumably Dave will welcome ideas for improving his utility which is available from **www.argonet.co.uk/users/daves/software.html**

Non-Millennium Bug

We were all so concerned about the Millennium Bug that we didn't notice another that crept up on us last month. E-mails carry the date in a format that, in September acquired another digit.

In the ANT Suite this took up a place that was used to indicate start of message and users of Marcel suddenly found that some of their mails were blank. The message was still there but included in the heading that normally isn't displayed.

Paul Vigay, who is maintaining the suite, produced a fix in days and it is available at **www.vigay.com/cgi-bin/search?a=inetupgrades**

If you still have empty messages from September keep them because their messages

Continued...

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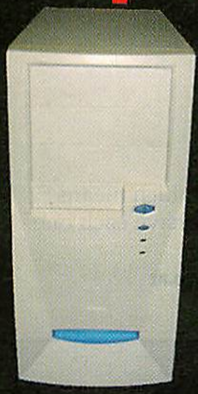
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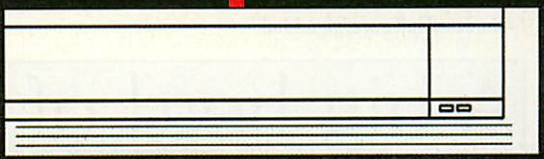
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A7000, RiscStation and Omega machines may also be switched and do not require a PS2MouseMini interface



PARAFS is a parallel port networking system for machines fitted with a bi-directional parallel port (A30x0 / A4000 / A5000 / A4 / A7000 / RiscStation / Mico / Omega / RiscPC)

It is implemented as a filing system and so provides transparent file sharing across machines without the need for cumbersome and slow transfer programs. Files and directories which are stored on the remote machine appear as if they are local

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Digital Photography Now

RISC OS content is to be featured on the new Web site, Digital Photography Now (**www.dp-now.com**). *Digital Photography Now* (DPN), which attracted 10,000 visitors and 60,000 page hits in its first 72 hours of live operation, is the pet project of Ian Burley, formerly *Acorn User*'s contributing news editor.

Another name familiar to *Acorn User* readers, Paul Vigay, will be editing a regular column on DPN addressing the needs of RISC OS users and the use of scanners, cameras, photo printers and software.

"RISC OS has always been a great platform for multimedia and imaging, like digital photography," said Ian. "DPN is a UK site and so we can provide some much-needed coverage for RISC OS."

Ian can be contacted at **ian.burley@dp-now.com** and Paul at **paul.vigay@dp-now.com**

What a load of old rubbish

Gigo is another trashcan app — it's an acronym for Garbage In, Garbage Out. The initial release last year provided the basic functions of file binning and unbinning (restoring the file to it's original location). Since releasing its source, some third party (credited in the docs) improvements have given it all the things it was meant to have:

- Files binned by date;
- Meta data shows when files were binned and where they came from;
- Auto expiry of old trash;
- Save to bin directly from apps
- Auto-rename (in bin) if name collisions occur
- Choices dialogue box (new to this version)
- Configurable bin location

Auto-rename is the main improvement over the previous release which means you can trash files with the same name from different places and not have each one overwriting the last.

Gigo 1.02 is down-loadable from its Web page: **http://homepages.ihug.co.nz/~rhudson/software/gigo.html**

A big herd of gnu

Bob Brand has just announced a preliminary release of a port of *GnuPlot* 3.7.1 for RISC OS. *GnuPlot* is a command-line driven plot program that can produce 2D and 3D plots of (almost) any function or set of data.

It exists on virtually any computer platform that has a C compiler. It can produce output in, among others, DXF, GIF, PostScript and EPS, CGM, HP-PCL (most HP DeskJets and LaserJets), most dot matrix printers, PNG, LaTeX (and pstricks, MetaFont) and, of course, RISC OS Draw and Sprite format.

The Draw output is closely modelled after the PostScript driver. It supports colour and black-and-white drawfiles, both with solid lines and with dash patterns as well as 75 different points.

The Sprite output can be in 16 colours (the standard desktop colours), 16 grey tones or black-and-white and with transparent or opaque background. For the rest it is like the other *GnuPlot* bitmap drivers.

This is a preliminary release. There is as yet no proper RISC OS front-end, it simply runs in a task window. And it uses *Draw* and *Paint* (or any other program that recognises drawfiles or sprites) as viewer. But since its main use is probably in processing scripts rather than interactive use, this is not too much of an inconvenience.

The sources are provided as well, so it is possible to compile draw and sprite support into your existing version of *GnuPlot* for (for example) Linux. A Windows version with draw and sprite support can be downloaded as well, in case someone wants to create drawfiles for use with *OakDraw* or *Xara X*. It works with the demo versions of both programs.

Download it from **www.brandpoint.tmfweb.nl/ riscos/** Please send comments, remarks and so on, to **rogp@brandpoint.tmfweb.nl**

In brief

will be revealed once you've added the small upgrade from Paul.

Risk for RISC

If, like me, you have an interest in board games you'll recognise the game RISK. Like many other board games it has been converted to an electronic format. I had lost track of this particular game so I'm grateful to Max for reminding me that a version of RISK for RISC computers is available from **www.casa1.demon.co.uk/risk.htm**

XML Xtreme

Justin Fletcher has been busy recently and has released a set of tools for XML, a structured data transport. It is in widespread use and many new Web and non-Web technologies are using it as a basis for data interchange. XSLT provides a language for transforming arbitrary XML data into other, more convenient forms. Most commonly, XSLT is used to transform structured data into formatted HTML.

The software is available from: **http://homepage.ntlworld.com/justin.fletcher/XML/**

Slay It

As I'm writing this I'm hearing reports of numerous Windows viruses and trying to remember when I last suffered from a RISC OS virus. Even though they are very rare it's not good to be complacent. Rob Kendrick, author of the Slayer software has produced a new version of Slayer although, if I understand him right, the only change is to the date.

The old version was showing a warning message that it was about to become out of date. The 'updated' version is at **www.pepperfish.org/~rjek/VDEngine,ffd** and Rob is now considering updating the program to a new version and is asking for ideas for new features to include or even new virus samples to slay.

Contacting AU

news@acornuser.com
John Cartmell


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New look for apps

Now that the new Operating System, RISC OS 4+, is upon us it's worth looking at what it offers as far as graphics are concerned. From RISC OS 2 there have been two graphics applications always included as part of the bundle; though not part of the Operating System both have been essential to the use and the success of RISC OS.

These applications are *Draw* and *Paint* while both are provided with every RISC OS machine their existence has not precluded development of alternative commercial and PD products which extend the options of vector and bit-mapped graphics while using the same file-types.

Both have had one specific problem as the main applications included with the operating system: neither of them are particularly Style Guide-compliant. It's good that current changes to the applications include making them more compliant, and the two making better use of the operating system.

Even though it's already easy to transfer files between *Paint* and *Draw* (the illustration shows this page that I've taken a snapshot of, dropped it into *Paint* then save from *Paint* into a *Draw* window and rotated) the use of simplified Clipboard facilities in RISC OS 4+ will provide an alternative means of transferring files that will work even if the initial application has been closed.

Although not much extended, *ChangeFSI* now works without some recent niggles: its window will stay where you put it rather than being centred every time a file is updated and sprites that it produces will come with sensible file names. As well as speed increases when decoding progressive JPEGs the application will now import unmasked PNGs.

Paint will be disc-based rather than a ROM component and has had numerous bugs fixed. Plus it will now use dynamic areas for its workspace to let it handle ever-larger files. In the past there have been problems importing JPEGs but the import code has been restructured to make the action more reliable. Additions include the ability to import unmasked PNGs and single sprites can now be saved as JPEGs.

I realise that I'm mixing my future and present tenses in respect of RISC OS 4+. This is likely to be a problem for some time. The new operating system exists; I've seen it and seen it demonstrated. At the time of writing this column it hasn't been released to the public but probably will have been by the time you read this. Or at least the first bit — the bit that I'm talking about will have been released. The full RISC OS 4+ will be released over two years so there is much more to come and RISC OS Ltd are willing to listen to you and me about what should be included in the new operating system.

The other application, *Draw*, can now export simple SVGs which is the vector graphics format that is to be used in Web documents.

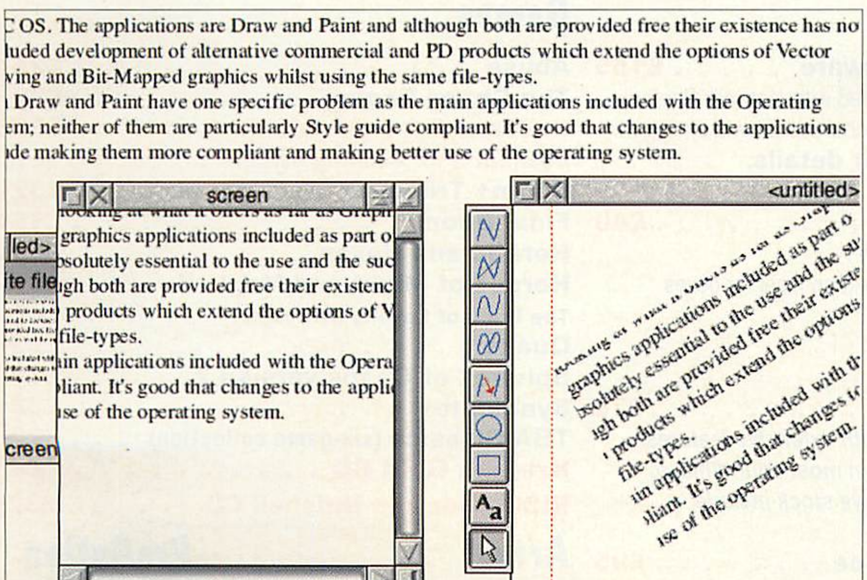
If you have read this column over the past year you will realise that I'm particularly attached to *Draw* and I was a touch deflated to hear the limited changes that have been made to it. But note what I've said above: RISCOS Ltd will listen to ideas. I'm not expecting miracles, although that there is someone listening seems to be close to a miracle, so I asked about a simple problem with *Draw* that I've questioned for over eight years:

Why does *Draw* have to use the System font as default? Now that all machines using this version of *Draw* are guaranteed to have anti-aliased fonts available it's silly to use a fail-safe system designed for machines without hard drives. I've asked Acorn (and RISC OS Ltd as well in the past) and have had the brush-off.

This time the answer was "We can do that. How do you think it should be implemented?" OK so I won't expect to see it on the first Select CD but later will do.

In the meantime I'm going through all the ideas I've had for improving *Draw*, *Paint*, *ChangeFSI*, *SciCalc*, ...

... if RISCOS Ltd are listening then I've got something to say. How about you?



Contacting AU

graphics@acornuser.com
John Cartmell

• The answer from last month's headline riddle was Gilbert & Sullivan's *Nightmare Song* from *Iolanthe*.

ISP for techies

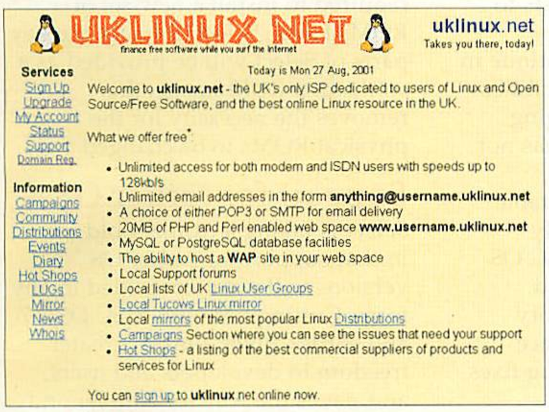
Free ISPs are not so much in fashion these days, but **uklinux.net** is dedicated to users of *Linux* and Open Source free software. **uklinux.net** is ideal for enthusiasts who want to learn about *Perl* scripts, *PHP*, Dynamic HTML and Web-linked database applications. To qualify for free access, you must call in using their dial-up number for at least an hour per month, averaged over a three-month period.

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Free penguin with every account?

Spammers keep out

Now that many of us are using "always on" ADSL and Cable Modem connections, security must be paramount. Readers who have accounts with Demon Internet will have recently received a service announcement alerting them to the dangers of running a SMTP "Open Mail Relay", and warning them that customers' unsecured SMTP mail programs can be accessed by unauthorised users, principally spammers.

Demon's new policy is to give the customer 24 hours to fix the vulnerability, and thereafter block access if the situation continues.

Users of Stewart Brodie's RISC OS *FreeSMTP* program will need to adjust the configuration to allow only incoming mail from their ISP's SMTP server. The default setting allows anyone to deliver mail to your machine's SMTP program while you're online.

It's your own mail processing system that will then decide that the item is not for you, and post it onwards and outwards from your machine back to your ISP, getting your ISP's smarthost mail server a bad name.

The most secure method is to block any incoming mail calls from outside your ISP's system. This may delay delivery of mail to you if your ISP's mail server does go down, but it's better to be safe than sorry.

There are two important configuration items for *FreeSMTP*, and they are both in the "smtp-conf" file. The first of these two is "forwarder" which in the case of Demon Internet should read:

```
forwarder * post.demon.co.uk
```

The other item that controls who can connect to your system is "acceptfrom", which for Demon Internet should now read:

```
acceptfrom post.demon.co.uk
```

This is used to selectively choose which remote hosts your machine is willing to accept mail from. If a host other than one listed attempts to deliver mail to your machine, it will be told that it does not have permission.

In brief

Play it again, James

Alex Waugh has taken over the maintenance and development of the RISC OS Web server *WebJames* from its original author Henrik Bjerregaard Pedersen.

The latest version of this freeware HTTP server is now able to perform "Server Side Includes". With SSI, each document being served is pre-scanned to pick up invisible keywords and arguments which allow dynamic effects on the pages when output — such as inserting today's date.

WebJames also supports redirection, a page cache, cgi-script interface, password-protection, content negotiation and much more. It is ideal for use with *PHP* (which is a recursive acronym for *PHP: Hypertext Preprocessor*). *PHP* is a cross-platform scripting language that is embedded in HTML pages and allows more extensive effects than SSI (see **www.php.net**). Alex also has a port of *PHP* downloadable from the same page as *WebJames*.

Alex Waugh's RISC OS freeware
www.ecs.soton.ac.uk/~ajw498/

Spice boy

Darren Windsor of Image Software is addressing the problem of how to view Web sites that don't work with the *Oregano* Web browser by the tricky technique of attempting to correct their faulty HTML.

In his latest version of his caching proxy server, to be called *Paprika*, this hot bit of software will parse and pre-process the pages and patch them to work with *Oregano*. Better not let Bill hear about this! Darren expects *Paprika* to transform the *Oregano* Web browsing experience.

Image Software
www.imagesoft.co.uk

Contacting me

David Dade:
comms@acornuser.com

Dawning of the

RISCOS Ltd reveal what's in store for RISC OS 4 Select and beyond

The launch of the RISC OS 4 Select Scheme was something much heralded and yet people held back and were suspicious.

Why? Well, for whatever reason, there was something of a distrust. We were being asked to shell out even more money apparently on something that didn't exist. Paying in advance for vapourware.

But it turns out this is not the case.

The software for the first Select CD already exists, in fact it took over five hours of demonstration to go through those bits that could be demonstrated. With much behind the scenes which could not be demonstrated or was only preparation for things to come.

So it is real, and we did cover much of it in the enthusiasm of last month's news. But here it is, more detailed and directly from RISCOS Ltd's press launch notes.

We have barely edited it leaving it instead to the software author's themselves to cover what they have done. In one or two places we have added a little clarification to show how a particular change may be of specific use in the future.

So without further delay we'll hand over to RISCOS Ltd:

ROS4+ Design goals

RISC OS Select has a number of goals which it aims to meet:

Improving RISC OS, based upon the work done by the original team, to make the overall system more reliable and user friendly;

Fixes for known bugs wherever possible;

Provide a framework upon which others may continue to develop components based on the OS;

Integration of external components where appropriate and suitable;

The most important of these are the first and third — improving the OS, and providing a framework upon which others may build.

In simpler terms, Select has more functionality for the user, but importantly provides a lot of scope for developers and enthusiasts to provide other products. It is expected that issues will continue in this vein, providing more facilities for developers and encouraging development in a way that has not happened before.

Select is one of the most stable versions of RISC OS presently available, building upon RISC OS 4's already stable background. Improvements such as memory protection for major workspace areas, the greater range of bug fixes, and updates for greater functionality, have all made the system much more stable than it ever has been before.

Release components

Select will consist of a similar set of release components as previous versions of RISC OS, although some will be packaged differently.

The primary difference with Select is that it will be provided over time. Select (issue 1) is only the first of an ongoing series of developments. Each issue of Select will be self-contained, but base its technology on that of the previous release. Select (issue 2) will, therefore, consist of the components supplied with Select (issue 1) plus any additional components.

This does not preclude the possibility of a component being removed or replaced should problems be found. However, the short period between issues will allow for a much greater turn-around for any issues that are identified.

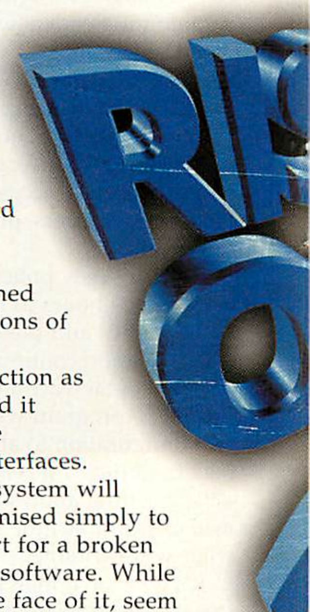
Unlike previous OS releases, where the period between releases was of the order of years, with Select the period will be a matter of months.

The primary difference for Select users is that they will not be required to install a new set of ROMs to use Select. Because the key parts of Select will be provided as a softloaded ROM image, this removes the necessity for the physical ROMs to be changed.

Support for earlier OSes

Select is taking a further bold move in that support for earlier OS versions will not be provided in any form. Cutting ties with RISC OS 3.7 and earlier, gives a much greater freedom to developers and users, and paves the way for simpler and more reliable software development. This, coupled with the fact that RISCOS Ltd do not have source to earlier OS versions, makes this move much more sensible for the longer term.

Select is fully compatibile with existing software: all software that works with RISC OS 4 will continue to work with Select in unmodified form. There are no known issues with third party software and Select. Software designed for earlier versions of the OS should continue to function as before, provided it conforms to the documented interfaces. The operating system will not be compromised simply to provide support for a broken piece of legacy software. While this may, on the face of it, seem like RISC OS is going to explicitly



new RISC OS

break such software, there is another facet to this.

Software which fails on the new version of the OS because of use of undefined interfaces is actually preventing further development of the OS, and promoting a broken operating system. It is expected that non-compliant legacy software will be fixed through patches or upgrades from the companies involved.

Most software will function with Select in the same manner that it did with RISC OS 4. Software which was updated for RISC OS 4 should already be compatible with Select.

Softload ROM images

ROMs are now supplied as softload images. This means that they are able to be changed much more easily than physical ROMs. Switching between different images will be achieved through a configure plug-in.

Typically softload images will take around five seconds to load from a power-on reset. Subsequent resets (through either the Task Manager, or by pressing Control+Break) do not require softload to be performed. Total time from switching on a clean Select machine to desktop is 12 seconds.



In addition switching to a different softload image, or disabling the softload can be done entirely from software with no dismantling of the machine or laceration of fingers being required. This means that if a piece of software is incompatible (which isn't likely, but is always a possibility), or if the user wishes to reclaim the memory used by the softload for some operation, or they just want to test on baseline RISC OS 4, they can revert back easily.

Softload sizes

In order to provide greater facilities on boot up, and take advantage of the facilities offered by softloading, the ROM size has been increased to 6MB. This makes it possible to include components which would otherwise have required separate softloading as part of the Boot sequence.

When softloaded, the memory used by the softload will not be available to the rest of the system. Consequently, a 66MB machine would, with a 6MB softload, appear to have 60MB of memory.

Changes over RISC OS 4

RISC OS 4, the previous release of RISC OS came in a number of different forms and different versions, 4.02 to 4.04. The term RISC OS 4 is intended to encompass all these versions.

In the next few sections, we will look at some of the changes that have happened since the last release and the impact that this will have on users and programmers.

Major changes

Wide-scale changes to system components to move toward dynamic area use for components which previously used shared memory. This improves both the efficiency of the machine and also its stability.

Networking components have been updated to integrate more efficiently with the system and to be more resilient. LanManFS makes inter-working with PC-systems much easier.

Kernel components separated to reduce the size and make the system more maintainable and more easily upgradeable.

First stage system-wide clipboard support. Clipboard support in the major OS-applications: Paint, Draw, Edit and ChangeFSI.

Improved CDFS, capable of reading RockRidge, Joliet, and VideoCD format CDs (with suitable CDdrivers). Internal CDFS driver improved to support a wider range of CD drives.

User-based configuration. Non-secure user support allows for much simpler configuration when there are multiple users of a system.

Kernel changes

The Kernel has changed by a reasonable amount for Select (issue 1), and it is expected to change more in future versions of the OS as it is streamlined and improvements are made.

A number of sections of the Kernel have been split off into separate modules. This allows them to be updated independantly of the Kernel, should that be necessary, makes the job of maintaining the Kernel simpler and abstracts away from a single monolithic Kernel that everything relies on.

Admittedly it makes a slightly-less compact Kernel and a couple of extra modules but the principle is that as individual components the new modules can be tested more thoroughly and without an entire ROM image re-issue.

The components which have been split off at present include Conversions (OS_Convert* SWIs), SysVars (Sys$* variables), OSSWIs (miscellaneous high level SWIs that had very little right being in the Kernel in the first place), ReadLine (a completely new and separate implementation of OS_ReadLine).

Dynamic areas

In addition to this, Dynamic Areas can now be treated as OS_Heap-like areas. The effect of this is that applications that might have just used RMA, or had to think about writing a special memory manager for Dynamic Areas can just use a couple of OS_DynamicArea calls.

System variables

System variables implemented by modules (code variables) can now be given workspace pointers. This

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means that they can be used more reliably from C without large amounts of support code.

Boot options

If Shift is held down, the Kernel will no longer drop to the configured language. Indeed, there is no longer any configured language. Instead, a 'BootMenu' is run. This is a simple set of options that allows booting from a number of alternate devices.

Many other, minor, improvements have been made to the Kernel, making it more stable, and providing better functionality than previously.

Internet components

The Internet components have changed to allow them to interwork much more reliably. In particular, the components now correctly respond to the death or re-birth of the Internet module. This means that replacing the Internet module with a softload, should this be necessary, can be achieved more reliably.

ShareFS

ShareFS has been split into two components — the file sharing system, and the 'Hosts' management system. This means that if ShareFS is disabled, the Hosts object is still available to users of the Freeway. While very few applications use it, this divide means that future developers do not have to rely on the existence of ShareFS to provide the Hosts service.

Resolver

Resolver is now able to be configured as a DNS server. Although this facility has actually been available for many years, it was never publicised. Small LANs can now be set up to use a single, central DNS server running on RISC OS without any other software being necessary. This is one step toward making it possible to use a RISC OS machine as a true IP gateway.

Firewalling

Firewalling is an issue that has provoked much interest recently and Select provides a mechanism for RISC OS machines to be firewalled. Based on the Unix firewalling system, this allows advanced users to block out connections from 'outside' and potentially make their machine unreachable. While RISC OS is not vulnerable to many of the attacks that are prevalent anyway, having the ability to remove these threats completely is a great advantage.

Mimemap

Recent developments from the W3C and others have brought forth various XML standards which are becoming more and more prevalent. In order to cope with these developments, MimeMap has been improved to accept wildcarded MIME types. At the same time, the performance of the module has been improved by up to six times. As MimeMap is used for extension translations of non-native filenames, this improvement will be beneficial across the whole system.

BootP

Much improved support for BootP allows the system to be booted with almost no local configuration (assuming that the remote server provides necessary details). Automatically configured details include IP address, resolvers, hostname, time servers and LanMan settings.

DHCP

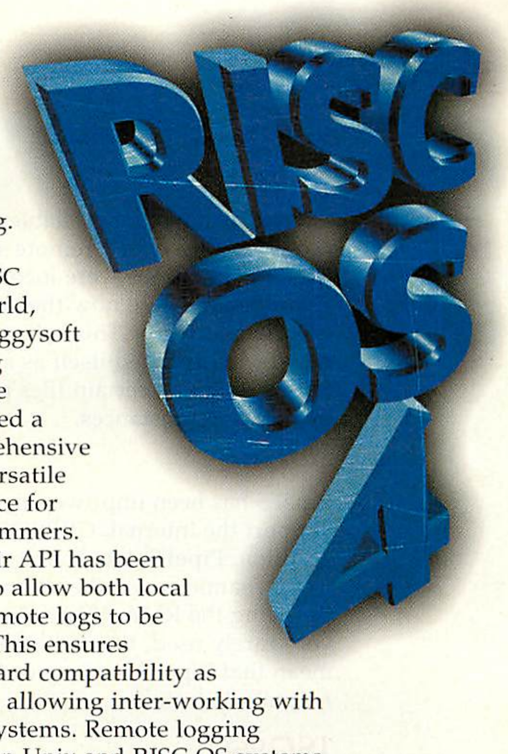
Licensing issues have prevented release of DHCP support but it is expected that DHCP support will be available in a later issue of Select.

System Time

Support for configuring the system time using a remote server is now provided. This allows the user to fetch the system time from an NTP or Time server on startup, or on demand.

Syslog

Remote logging using the well-known SysLog protocol is now provided as standard. SysLog has long been used within the Unix world to provide centralised event logging. Within the RISC OS world, the Doggysoft SysLog module provided a comprehensive and versatile interface for programmers.



Their API has been used to allow both local and remote logs to be used. This ensures backward compatibility as well as allowing inter-working with Unix systems. Remote logging between Unix and RISC OS systems is now not only possible, but simple and very powerful. The SysLog server and remote logger implementations are compliant with the latest drafts for SysLog format compliance.

Internet speed up

Internally, Internet system calls are now processed faster than previously. Tests indicate approximately 25% speed increase on most common case. In a similar vein, Freeway now places a much lower load on the system than it did previously.

These changes are part of the ongoing work to improve the Internet stack. Future issues of Select can expect a similar range of changes.

File systems

The file systems in Select are one area in which very little change will be seen by the average user. LanManFS is present in ROM, so accessing remote machines is made simpler for the user, although no front end has yet been decided for this.

FileSwitch

The FileSwitch module controls file systems and provides almost all developer-facing filing facilities. Various minor improvements suggested by developers, have been added to FileSwitch, as well as a few bug fixes for new file systems (including those supporting the

RISC OS 4 'ioctl' interface).

ShareFS

ShareFS is now more reliable when accessing files over a remote share. Certain operations were incorrectly abandoned, where now they are reported correctly. This behaviour may have exhibited itself as a failure to access certain files under extreme circumstances.

PipeFS

PipeFS has been improved to support the internal 'GBPB' call. In addition, PipeFS data is now stored in a dynamic area rather than polluting the RMA. While PipeFS is very rarely used, these changes mean that PipeFS is many orders of magnitude faster.

ISO9660

When the CD specification ISO9660 was designed, it was with a DOS-like environment in mind. However, time moved on and extensions have been made within ISO9660 to allow extended attributes to be stored on a disc.

One of these extensions was the Acorn file type information (the so-called 'ARCHIMEDES' extension) which allows the ! character to appear on CD. Joliet is a more commonly known development from Microsoft which allows the limited use of Unicode characters within filenames as well as allowing longer names than the standard disc format. In parallel with this, the 'RockRidge' standard allows potentially CD-length long filenames.

CDFS

CDFS has been improved to support these standards. As well as this, CDFS also supports reading mixed mode CDs (such as VideoCDs, or 'Enhanced audio CDs'). This is subject to the specific CDFS driver for example, CDFSSoftSCSI being able to read such discs with the drive fitted. The internal CDFS driver CDFSSoftATAPI has been improved to support a greater range of CD drives. It is also possible to configure booting from a CD as part of the new Boot choices.

Filer components

Filer components, in particular the Filer itself, have been improved in little ways. Changes to the Filer have been limited due to its ubiquitous nature — modifications to the Filer are much more noticeable and more likely to cause confusion than aid use.

The iconbar Filers have all been improved to allow sharing using a centralised ShareFS dialogue. This standardisation allows for other developers to provide similar facilities from their filers. It also allows Filer itself to provide a 'Share' option for directories.

Filer

Filer now has the ability to sort files numerically as well as alphabetically. Selections within Filer windows can perform transient highlighting. The effect of this is that as you make a selection, you can see what you are selecting.

Filenames which are all uppercase can be displayed as lower case. Names which are all upper case are harder to read, in general, and therefore some users may prefer to force them to lower case.

A file which is selected can be renamed by clicking Select on the filename. This allows renaming without the use of the Alt key. These features are all optional.

Where a Filer window is updated or resized while a file is being renamed does not cause the rename icon to be lost — you can continue. This is very useful where a group of shared machines may be modifying the directory, or an application is writing to a file in that directory.

Shared directories

Shared directories are now indicated within Filer windows. Selecting the 'New directory' menu option now allows the user to create a directory with the name 'Directory' and then rename it immediately.

File drags now use the 'DragAnObject'-style drags, displaying the filename of the object, or a count of the objects being manipulated.

In addition, Filer is now much more resilient to faults occurring in the background. Filer defaults to 'confirm on delete' when no configuration has been made. This is much safer and should prevent a misclick being the cause of much annoyance.

FilerAction

FilerAction is the component which provides multi-tasking file operations such as copying and counting; it can now act as a proxy for other tools. What this means is that a new component can take over FilerAction's job for certain operations.

If, for example, someone were to write a 'Count' tool which displayed a graphical representation of the space used, then they would hook on to FilerAction and use its proxying to communicate with the Filer. Other examples of operations which might be replaced include the 'Find' operation, or copying. Future versions of Select may include whatever extended tools people develop (subject to agreement, obviously).

ADFS Filer

ADFS Filer has an optional 'Quick' format. This allows the actual format part of the disc format to be skipped and just the new, empty, map and directory to be written. The disc must have already been formatted with the same format. It is not a fast format, just a quick format. While floppy discs are going out of fashion in these days of multi-megabyte data files, the facilities is very useful on those occasions that a floppy disc is needed.

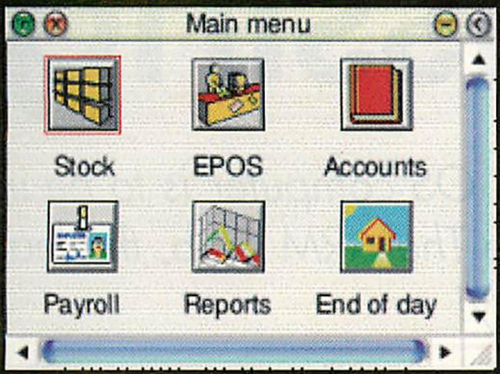
CDFS Filer

CDFS Filer has been re-written from scratch. The new Filer provides the same facilities as the original, as well as adding information about the current disc, improved Share support (as explained above) and

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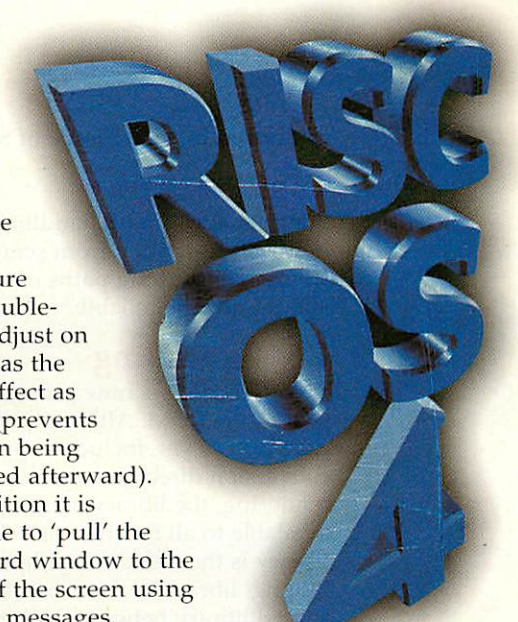
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an automatic launch of the new CDPlayer application when an Audio CD is inserted.

RAMFS Filer

RAMFS Filer now sports a Share option in the same way as the other filers.

Window Manager

The WindowManager has not been updated greatly, but changes should be useful to developers. Various fixes have been made for a few minor issues. Icons can now be 'tinted' in an arbitrary manner. This may be useful to developers, but has yet to be used in any part of the OS at present.

Holding the pointer at the edge of the screen now sends a message to tasks. This might be useful for launcher type applications.

Desktop components

The Desktop components have had some of the larger changes of the whole system. As mentioned earlier, there is a new CDPlayer application. There are many CDPlayer applications available as freeware. The application supplied is simple and plays CDs. CDPlayer communicates with AcornCD to read track and disc names.

Paint, Draw, Edit

These applications have all been updated to use the ClipboardHolder module. This provides simplified Clipboard facilities for applications that want to export a single file type using the standard Clipboard protocols. Paint, Draw and Edit have also had their menus updated to be more style-guide compliant.

Paint

Paint has had numerous bug fixes and should be much more stable now. As well as being provided as a disc component, rather than a ROM component, it also supports dynamic areas for its workspace. This allows it to use much larger workspace than it could previously handle. Paint will import JPEGs more reliably than before due to restructured import code, and will also import unmasked PNGs. Paint can save single sprites as JPEGs.

Draw

Draw has not been modified as greatly as Paint, but can export simple SVGs (W3Cs vector graphic format). The menu structure within Draw has been revised to be more styleguide compliant and to incorporate the new Clipboard operations. The structure may seem a little strange at first, but it is an improvement on the aging RISC OS 2 layout.

ChangeFSI

ChangeFSI can now import unmasked PNGs, and export via the clipboard. On processing files, the ChangeFSI window is no longer forced to be centred. Where ChangeFSI creates a sprite in a post-3.5 style mode, these are given useful names rather than semi-random numbers. Decoding speed of progressive JPEGs (via djpeg) significantly improved over earlier versions.

Squash

Squash can now compress and decompress GZip files in addition to Squash files. This makes decompressing downloaded files much simpler.

Puzzle & diversions

Puzzle has been given a complete overhaul to make it a much more interesting application. It may be a small 'Diversion', but it's fun. MemNow has also been updated, and we expect the range of diversions to be increased over time.

Task Manager

TaskManager has had a few visual tweaks to allow it display memory in a 'tidier' form, similar to that of FilerAction. You can also reset the machine from the shutdown dialogue. This is reflected in the external TaskManager API which now allows shutdown and restart through a single call.

Pinboard

The Pinboard can now use a faded background, with different colours at the top and the bottom. It is now possible to configure that double-click Adjust on icons has the same effect as Select (prevents the icon being removed afterward). In addition it is possible to 'pull' the Pinboard window to the front of the screen using special messages.

Together with the Window Manager's edge notification, this might be used to create a simple 'pinboard front' application. Or some other mechanism might be used. The facility is there for other developers to exploit as they see fit.

TaskWindow

The TaskWindow is now much more efficient with its use of polling and buffering. Consequently, TaskWindow applications under Select (issue 1) should use around 1% of processor time instead of 60% under normal circumstances where they use the TaskWindow_Sleep upcall.

This improvement applies to TaskWindows waiting on PipeFS and most command line-based internet utilities. In addition a number of minor problems with TaskWindow have been addressed.

Graphics system

The graphics system has been improved slightly. SpriteExtend — the provider of JPEG rendering routines — now supports a greater range of JPEGs, in particular Exif and some of the stranger formats of JPEGs.

Exif images are those produced by digital cameras, and contain a variety of different parameters about how the picture was taken and what the camera was that took it. While this information isn't used by the rendering routines, the format is now recognised and such images can be displayed using the internal renderers. The internal routines still do not support progressive JPEGs. This might be

addressed in a later issue of Select.

Font Manager

FontManager's path handling code has been re-written from scratch. Consequently, long paths of fonts should now be reliable.

PNG decoding

PNG decoding is now provided as part of the ROM. Although this does not, as yet, include support for conversion directly to sprites, or rendering, the library is made available to all for their use. This library is the defacto standard 'libpng' library and can be used as a shared library between multiple clients. This library gives Paint and ChangeFSI their ability to import PNGs.

CompressJPEG

CompressJPEG, the module used by ChangeFSI to create JPEGs, has been improved to take any form of data that may exist in a sprite as input, including paletted input. CompressJPEG is also able to embed comments in the JPEG it creates. This allows creators to 'mark' their JPEGs if necessary. It is this that gives Paint the ability to export sprites as JPEGs.

Sound system

The sound system has been left idle for a long time. Select (issue 1) is no exception to this, unfortunately. Actually, work has been done on the sound system to make it more resilient to parts being replaced 'on the fly'.

Any component of the sound system (SharedSound, SoundScheduler, SoundDMA, SoundChannels, WaveSynth, StringLib or Percussion) may be replaced at any point with minimal effect on the rest of the system. In addition, SharedSound is now considered a vital part of the sound system, providing a layer above SoundDMA, notionally parallel to SoundChannels.

In addition, a 'Sound service' is issued whenever a sound occurs. Developers may use this to provide a form of visual beep, or to re-route sound to an external source should they wish to.

Configuration

The plugin configuration system in RISC OS 4 is pretty much unchanged, but has the new configuration options where appropriate.

Boot configuration is unchanged, but for the removal of the 'greyed' options from the 'Apps', 'Look at', and 'Run' sections. These were unselectable because they did not apply to that section. Most of the time they just cluttered the display and made it more difficult to see what was actually happening. The new plugins are much cleaner and clearer.

Filer configuration includes the new options for Filer windows — Active selections, Lower casing, and Select to rename.

Font configuration is now categorised, using a Filer-like display similar to that of the top level Configure application.

Keyboard configuration includes the option to configure NumLock on or off. This may not be useful to most users, but anyone with an infrared keyboard will find it very useful as these invariably default to num lock active.

Pinboard configuration has the option to configure the faded background and to disable 'Filer-like' clicks (Adjust removing the icon afterward).

Screen configuration is now categorised in a similar manner to that of Font setup, dividing the configuration into Monitor and Screen saver sections. A new screen saver 'Galaxy' is included with those previously provided.

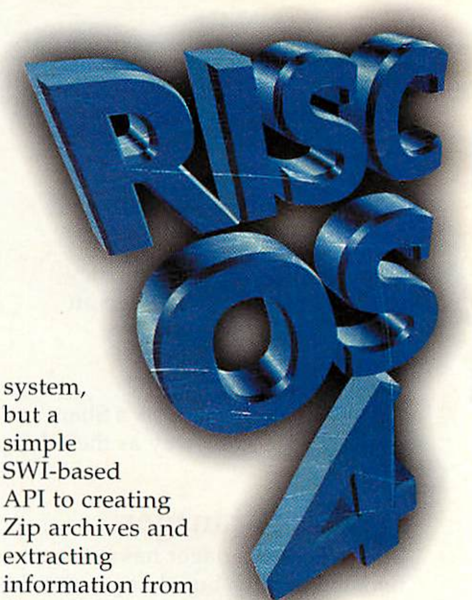
Internet configuration is very similar to the original InetSetup, but options are provided for configuring time servers, configuring SysLog serving, and enabling the Resolver server. In addition, the firewall script can be edited from here.

Miscellaneous

In addition to the areas above, there are many other changes that have been made to the various parts of the system.

Addition of the ZLib shared library means that any application can now use 'standard' ZLib compression or decompression. This facility is used in the PNG module described previously, and in the Zipper module.

The new Zipper module provides facilities for creating and decoding Zip files. It is not a file



system, but a simple SWI-based API to creating Zip archives and extracting information from them. It is expected that this would be used to extract distributions of files associated with applications, or as a simple mechanism for creating new archives.

A new PathUtils module provides facilities for manipulating Path variables. This may not be useful to most developers, but the handy 'AppPath' and 'PrepPath' commands are simpler and less error prone than manually setting up such paths. FontManager uses PathUtils to provide reliable path manipulation.

Obey files are now always cached. This speeds up all obey files by a factor of about four times on local filesystems, and on remote filesystems the improvement can be as high as 15-20 times.

BASIC assembler has been updated very slightly to support some frustrating omissions.

Boot sequence

The boot sequence has been restructured since RISC OS 4. Although the general structure remains the same, the usage is slightly different. Initially, there is support for multiple users but there is no selector plug-in yet. This selects a different set of choices for that user. Choices are actually structured as a three tiered path variable. This allows hardware, 'default' and user configuration.

And there it runs out, in full flow. Naturally we would just like to keep on going but that's all we get this time. Except to say that RISCOS Ltd are accepting ideas for improvements — but obviously they would be happier to accept ideas from people who are members of the Select Scheme. Don't forget to join. END

Looking for

Steve Turnbull reports on new standards in computing

The need for standards has always been accepted in the academic computer world, though harsh commercialism has always striven to divide and dominate markets with proprietary systems.

Microsoft, to name the largest, has spent much time and effort attempting to isolate their market from all other commercial companies. This has been done in various ways: continually changing programmer interfaces, changing file formats and deliberately obscuring file contents are the technical methods.

Strictly speaking there's nothing "wrong" with trying to tie your customer base to your own products only. It's just business. However it is certainly short-sighted: open systems, cooperation and being generally good chaps tends to endear one to the rest of the world who will accept you as a leader — rather than generating enemies. Plus the cost factor of not having to spend millions keeping everyone else out.

To be fair, there are slight moves in a more open approach from Microsoft though even these efforts are still tainted with the corporate isolationist approach.

Academics, however, tend not to make any money out of their developments. Developments are usually made from the viewpoint of "what's the best way of doing this" as opposed to the narrow-minded "how am I going to profit" outlook.

So the development of standards is usually (though not exclusively) the province of the academic. And so it is with XML which comes to us via the W3 Consortium which is also responsible for the development of HTML.

XML is another one of those "next big things" that we hear so much about all the time. However it is a very simple thing with huge potential and ramifications and, as such, is beginning to get noticed in the commercial world.

What is XML?

Part of the problem I shall have here is getting over the sheer simplicity of this — it's almost too simple. So let's get the abbreviation sorted out first:

XML stands for eXtensible Mark-up Language.

Which it isn't.

XML isn't a language at all, not like BASIC or C. Languages have a vocabulary and a grammar, XML doesn't. What XML is is a set of rules for defining a mark-up language.

So we have to go a stage backwards and look at what a mark-up language is. Probably the most well known mark-up language is HTML, which stands for Hyper Text Mark-up Language.

HTML is a set of tags which define how the content of an HTML document (the text) should be formatted and placed. It also permits links to other documents and the inclusion of graphic images and so on.

The tags are interpreted by an application program (usually a browser) which then displays the contents of the page according to its interpretation of the hypertext tags. Notice that it's the tags that are the important feature here, the content is irrelevant to the browser it has no meaning. It's the tags that determine how the content is presented.

The tags are the "mark-up", this word comes from the printing industry where particular marks are used on printer proofs in order to specify how paragraphs and words should be displayed.

The whole purpose of the mark-up language is to separate the content from its structure. The mark-up language defines the structure.

With HTML it is very common to have the same structure of tags in separate pages, which gives a conformity of page appearance despite the difference in content.

As an example the charity bike ride pages on my personal Web site (**www.cix.co.uk/~turnbull**) all have the same structure (and are copies one to the next) but obviously have different content (Figure I).

A side issue on this is that HTML pages can be created on the fly using a basic page and then altering the content — which means that to change the entire structure of a whole set of pages only the structure of the basic page needs to be altered. All the resulting pages will then conform to the new structure.

Another way of looking at this is that you have data and "meta data". Meta data is data about data. Meta data is a concept such as the idea that a person has a name, while the data is a particular occurrence of that. In "My name is Steve", 'name' is meta data while 'Steve' is actual data but could just as easily have been 'Fred'. Representing this in a mark-up language you might have <name>Fred</name>.

Getting back to XML it's important to remember that XML is not a mark-up language in itself, it is a set of rules for *defining* a mark-up language. So where you see something saying that they are using XML, beware. What they are saying is that they have created a mark-up language for their application that conforms to the rules that XML lays down.

On the other hand any mark-up language that follows the XML rules can be treated similarly and will be understood in the same way. HTML,

the X-Factor

by the way, does not follow XML rules since XML is extremely strict in its rules while HTML tends to be rather loose. For example, XML insists that every tag has a matching end-tag, HTML doesn't do this — even if it should.

XML rules, okay?

There are two parts to XML: the syntax and the declarations. The syntax rules tell you how to create the mark-up information and where to put it in the document while the declarations specify what actual mark-up can be used and what tags can be nested inside other tags. If this seems a bit tricky we will be going over it in more detail with examples.

The first part we are going to look at is the declarations of what is legal in the mark-up language. I won't be covering absolutely everything here, some of the more exotic options would only confuse the issue but all the necessary information is at **www.w3.org** or you can get books on the subject if you want to look into the subject in more detail.

It is a nice idea if we are looking at an actual example to illustrate the points being made so in this instance I am going to use the concept of configuration files.

One of the little things that's been niggling me over the years is PD programs that don't have configuration programs — you have to edit text files by hand. Now there's a good reason for this, configuration windows are boring to write, fiddly and get in the way of programming the actual important bit of any program.

On the other hand they do make life easier for the user. So what to do? The obvious answer is a standard configuration program that can be used by any application. But to have this you have to have a standard format configuration file. Which is where XML comes in, using a specific XML-style we can define a standard configuration file format which a standard configuration program can understand and edit.

Next step then is to define our configuration file format in terms of its structure. We have to think also at this point of all the types of configuration we might have to implement.

First of all configuration windows are often divided into sections, there might be a section on how the window display looks and another for miscellaneous options. Within each of these sections you can have: individual switch options (either on or off); there may be sets of "radio" buttons where only one of the options is available; you might have a write-in value (which could be text or a number); a slider control; or perhaps a menu selection. We'll call these "controls".

Just to add to the complication either the switch options or the radio buttons might toggle whole sections of other controls on and off.

We can see already that there is a hierarchical structure here. We might allow the main configuration sections to have sub-sections but that would probably be too complicated since we have the radio buttons to control that kind of sub-section.

So there's a rough definition of the problem: Create an XML specification for a configuration file which would allow a standard application program to load edit and save the file.

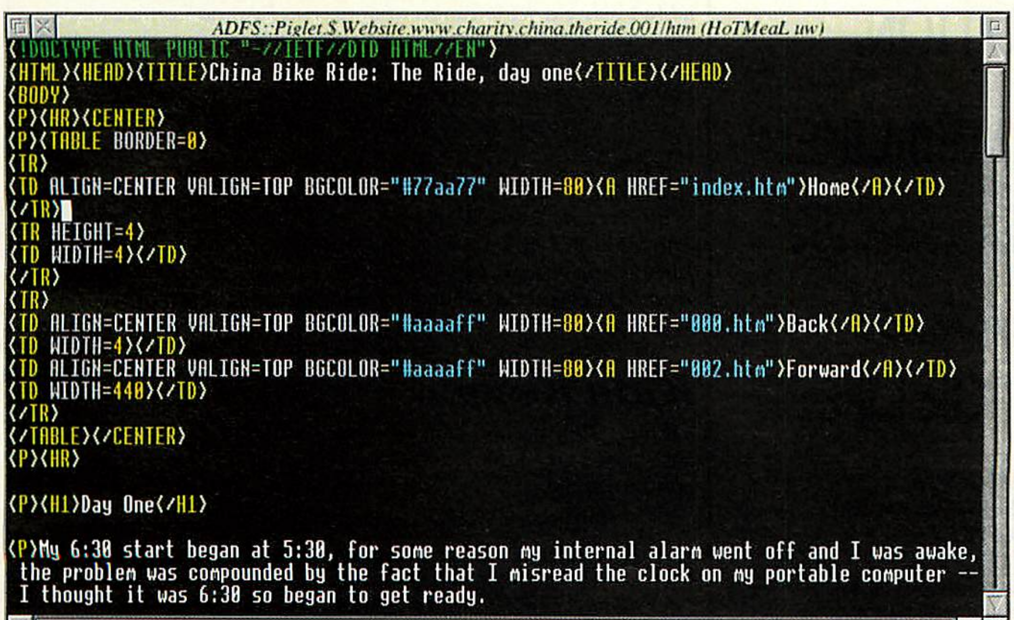
XML declaration

XML documents have a very simple structure: There is a prolog and then a single root element (which can have other elements in it). And that's all there is to it.

All the parts of the prolog are optional however it is wise to include as the absolute minimum the version of XML you are using, like this:

```
<?xml version="1.0" ?>
```

The two markers



```
<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML//EN">
<HTML><HEAD><TITLE>China Bike Ride: The Ride, day one</TITLE></HEAD>
<BODY>
<P><HR><CENTER>
<P><TABLE BORDER=0>
<TR>
<TD ALIGN=CENTER VALIGN=TOP BGCOLOR="#77aa77" WIDTH=80><A HREF="index.htm">Home</A></TD>
</TR>
<TR HEIGHT=4>
<TD WIDTH=4></TD>
</TR>
<TR>
<TD ALIGN=CENTER VALIGN=TOP BGCOLOR="#aaaaff" WIDTH=80><A HREF="000.htm">Back</A></TD>
<TD WIDTH=4></TD>
<TD ALIGN=CENTER VALIGN=TOP BGCOLOR="#aaaaff" WIDTH=80><A HREF="002.htm">Forward</A></TD>
<TD WIDTH=440></TD>
</TR>
</TABLE></CENTER>
<P><HR>

<P><H1>Day One</H1>

<P>My 6:30 start began at 5:30, for some reason my internal alarm went off and I was awake,
 the problem was compounded by the fact that I misread the clock on my portable computer --
 I thought it was 6:30 so began to get ready.
```

Figure 1: A mark-up language separates the contents from the structure

```
<!ELEMENT config-file (title , all-sections , action-buttons)>
<!ELEMENT title (#PCDATA)>
<!ELEMENT all-sections (section+)>
<!ATTLIST all-sections
        style (tabs | radio) "radio"
        position (top | left | bottom | right) "right" >
<!ELEMENT section (control+)>
<!ATTLIST section
        name CDATA #REQUIRED >
<!ELEMENT control (switch | radio | slider | menu)>
<!ATTLIST control
        name CDATA #REQUIRED
        help CDATA #REQUIRED >
<!ELEMENT switch EMPTY>
<!ATTLIST switch
        status (on | off) "off" >
<!ELEMENT radiogroup (radio+)>
<!ATTLIST radiogroup
        radio-btns IDREFS #REQUIRED
        which IDREF #REQUIRED >
<!ELEMENT radio EMPTY>
<!ATTLIST radio
        name CDATA #REQUIRED
        id ID #REQUIRED >
<!ELEMENT slider EMPTY>
<!ATTLIST slider
        lo-value CDATA #REQUIRED
        hi-value CDATA #REQUIRED >
<!ELEMENT menu (#PCDATA)>
<!ELEMENT action-buttons (act-btn+)>
<!ELEMENT act-btn EMPTY>
<!ATTLIST act-btn
        name CDATA #REQUIRED >
```

Figure II: A simple XML document to describe a configuration file and how to display it

<?xml and ?> specify the start and end of the XML declaration, and every declaration must be present at the beginning of the document. The next most important part is to specify whether the document is standalone or whether the processor will have to get data from an external source.

```
<?xml version="1.0"
standalone="yes" ?>
```

The advantage of using external sources is that the rest of the declaration can be held in a standard external location. Possibly over the Internet or, more likely in RISC OS environment, within a special resource within Boot.

Then we come to the elements themselves, the general structure of an element is this:

```
<!ELEMENT elem-name content-model>
```

A legal element name has to start with a letter or underscore and can be followed by any number of letters, digits, hyphens, underscores or periods. The content model is the place where you define what can be contained by this element, there are four options:

Empty which means that this element cannot contain anything;

Any permits the element to contain other elements, or text, or nothing. This is not a recommended option;

Element only means that this element can only contain sub-elements; and finally

Mixed which means text-only or text and elements. The text-only form is the one used most often (along with the Element only) and appears as

```
<!ELEMENT descrip (#PCDATA)>
```

Notice how the # symbol is used to introduce pre-defined keywords.

The element-only option is the one that gets used the most because this defines what can and cannot be nested, as such it is also the most complicated. There are a number of different relationships that can be defined:

• Just one single child element is permitted, specify the name of the child in the parentheses:

```
<!ELEMENT submenu (menulist)>
```

• Multiple elements with a specific sequence (separated by ',') and alternatives (separated by '|'):

```
<!ELEMENT section1 (partA , partB)>
```

which means section1 has two parts, A followed by B. Or:

```
<!ELEMENT section2 (partC I partD)>
```

which means section2 has only one part which is either C or D. Or:

```
<!ELEMENT section3 ((partA | partB)
, (partC I partD))>
```

here section3 has two parts, the first is either A or B and the second is either C or D. The parentheses are used to create sections.

Finally there are the codings to define how sub-elements can be repeated:

```
<!ELEMENT section4 (partE?)>
<!ELEMENT section5 (partF*)>
<!ELEMENT section6 (partG+)>
```

The operator ? means optional, * means repeat zero or more times, + means repeat at least once but can be more. Finally you can apply the repeaters to sets of child elements like this:

```
<!ELEMENT section7 (partH | partI
| partJ)*>
```

Which means that you can have any of these three parts any number of times and in any order.

So, for our configuration file format, section declarations might look like this:

```
<!ELEMENT config-file (title , all-
sections , action-buttons)>
<!ELEMENT all-sections (section+)>
<!ELEMENT section (section-name ,
control+)>
```

Because there needs to be at least one section of options but there might be more, and each section consists of one or more controls. At the top level we want to have the title of the window, the option sections plus an element that states what action buttons will be available, such as Save, Apply and Cancel.

As a final point, as can be seen in Figure III, where an element is defined as being EMPTY there is a shorthand notation rather than having to write **<thing name="x"></thing>** we can just put **<thing name="x" />**.

Attributes

The Element declaration specifies what elements we have, what they contain and how they relate to one another, now we need to look at how we define the attributes each element can have.

Taking HTML as an example there is the TD command which is used to define a table entry:

```
<TD align="center" valign="top"
width="80">
```

Each of the items following the TD

```
<title>Example Config File</title>
<all-sections style="radio" position="right">
  <section name="Display">
    <control id="pagerulers" name="Show page rulers" help="Controls
whether the page rulers are displayed in the main window or not">
      <switch status="off" />
    </control>
  </section>
  <section name="Miscellaneous">
    <control id="xferpro" name="Protocol" help="Which transfer
protocol to use">
      <radiogroup radio-btns="rbtn-PPP rbtn-SLIP" which="rbtn-PPP" >
        <radio name="PPP" id="rbtn-PPP" />
        <radio name="SLIP" id="rbtn-SLIP" />
      </radiogroup>
    </control>
  </section>
</all-sections>
<action-buttons>
  <act-btn name="Save" />
  <act-btn name="Cancel" />
  <act-btn name="Apply" />
</action-buttons>
```

Figure III: An example implementation of the XML in Figure II

and inside the < > symbols is an attribute.

Attributes are defined using an attribute list, there are three parts to each attribute: the name, the type and a default declaration — what that attribute should be set to if it is not mentioned.

Here's an example of what the attribute list for a section might look like:

```
<!ATTLIST section
    help CDATA #REQUIRED
    scrolling (yes | no) "no" >
```

Here we have the name of the tag (section) followed by a line that says that some help text is required (CDATA stands for character data) while we also have an option called scrolling where we say what the options are (yes or no) and have defined the default setting as no.

There are nine different types of attribute of which CDATA and the enumerated type are the most common. The tag can be specified as REQUIRED, IMPLIED (means the item is optional) or FIXED (means the item will never change value and the fixed value must be specified. The full list is given in the panel.

```
pagerulers:off
xferpro:PPP
```

Figure IV: How the actual data file for the XML in Figure III might appear

There are a couple of other definable items, one is the Entity, which is simply an abbreviation for other data. In conjunction with external sources it means you can use an abbreviation for data that might change if the external data changes.

It can also be used to define some text which is used repeatedly throughout a XML document, perhaps there are some attributes that are used more than once. Using the Entity declaration we can define it once and then use the abbreviation in later declarations.

Configuration

Getting down to brass tacks in our example we have what is essentially a very simple XML document which is shown in Figure II and an example of how an example might look in Figure III.

One additional point I have introduced but not mentioned above is the use of IDs. In an attribute list you can specify that an element must be given a unique ID and in another element you can specify an attribute as being an IDREF or IDREFS (a list of IDs). Here I have used this facility to define a group of radio buttons, each has a unique ID which is used in the radio group element to specify which radio buttons belong to that group and which one is selected by default.

I am not claiming that this is the very best way of achieving the result we are after, there are alternative representations that could be looked at — that is what standards and international agreements are all about, the point about using XML is that the system can be platform independent.

There is quite a bit more to XML, for example I've used the ID and IDREF to ensure the correct buttons belong to the correct group, but there are no data-types in XML. To correct this a whole separate level has been developed called the Schema which does have data types (and a lot of them) and permits new ones to be created allowing much tighter control.

From the basic XML a number of standards are already being developed to cover specific applications — and many academics are vying for top position in these different development areas:

XLink is an XML syntax "which allows elements to be inserted into XML documents in order to create and describe links between resources". As mentioned XML Schema is "describing structure and constraining the contents of XML 1.0 documents".

There is also XUL which is a standardised way of describing windows systems and user interfaces in XML ("Essential XUL Programming", Bullard, Smith & Daconta. Published by Wiley ISBN 0-471-41580-4).

On another level there is development of a standard system for extracting element information, Document Object Model (DOM). As XML documents have a strictly defined structure it is possible to have a standard interface that can access and extract information. At RISC OS level a DOM module could be used to make accessing the information easier.

So there you have it XML in a nutshell or, at least, the beginnings of it. A very simple concept with a very wide reach. END

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RISC OS 2001 Show

The all new RISC OS 2001 Show is just about on us and the last steps in finalising the organisation are taking place as we move into the next exciting phase of the RISC OS market.

At the current time almost all show area is allocated with all the usual exhibitors plus a few more less expected ones. At this show you can look for:

Castle Technology, RiscStation, Acorn User, Cerilica, Softease, APDL, Electronic Font Foundry, Warm Silence Software, Archive, R-Comp and R-Comp Interactive, Reflex Technology, CJE Micros, Photodesk, Chris Morison/Organiser, Akalat Publishing, PHR Computers, and Clic Education.

New products are anticipated from R-Comp, but will remain a secret until the show itself. Chris Hornby of Photodesk admits to working on something new but will release no details until it's ready. Add in the possibility of the RiscStation portable and production-ready Omega and it could be an eventful show.

Theatre

A full programme of talks will be given in the lecture theatre, located in a room immediately adjacent to the show hall. Details have yet to be finalised but it is expected that a wide variety of topics will be presented by leading suppliers and developers. Included should be a demonstration, by Cerilica, of the latest features of Vantage.

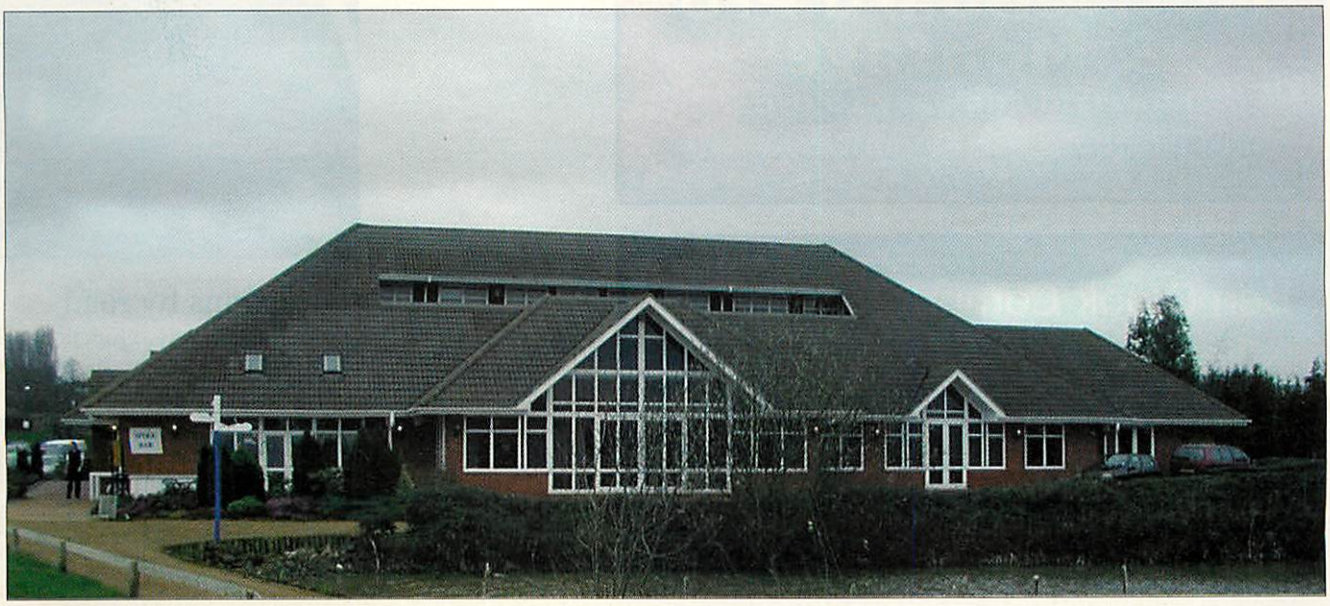
One theme this year will be education, and a special effort is being made to attract those in the educational system still lucky enough to be using RISC OS computers.

Venue

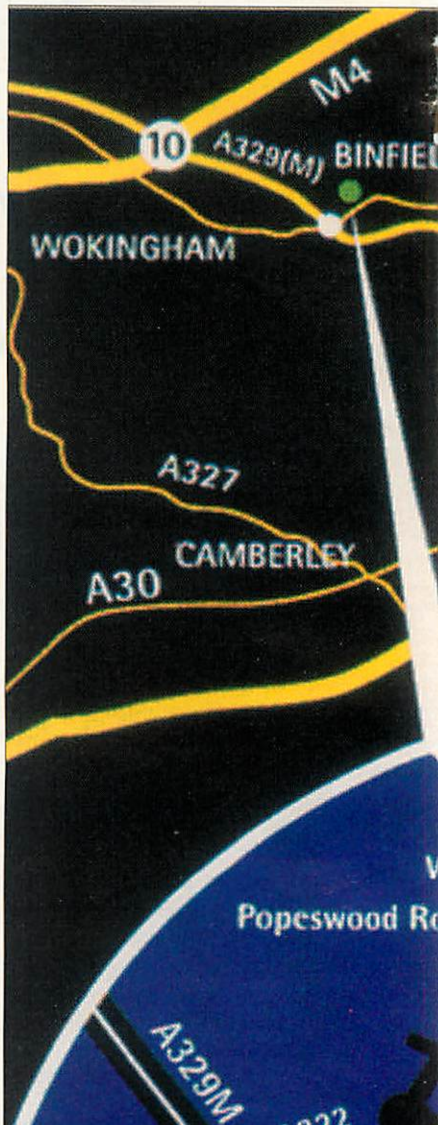
This year the RISC OS 2001 show moves to an exciting new location, the Blue Mountain Golf Centre which lies in attractive grounds and provides a much easier venue for the majority of exhibitors and attendees to reach.

For those travelling by rail, a shuttle bus will be provided from Reading mainline station. Reading has been chosen since it has excellent rail connections including a rapid service from London and Heathrow.

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Take the first exit left to Coppid Beech r

Continue straight over the next roundab
roundabout. Take the 2nd exit and then
located at the end of the lane on the righ

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OS Ltd & RiscStation



ow the A329(M) signposted Bracknell.
oundabout, signposted Binfield.

out, through traffic lights to the next
first left into Wood Lane. The venue is
t.

you can have a car route planned for you

will operate on Saturday, every hour on Sunday. Visitors should head towards the lower numbered platforms and the "Brunel Arcade" shopping area, then exit through the main doors to the side of WH Smiths. The shuttle buses will leave from the far side of the road (on the opposite side to the Taxi rank). Buses will be operated by Burgfield Minicoaches and will carry RISC OS 2001 signs.

Blue Mountain Golf & Conference Centre, Wood Lane, Binfield, Berkshire, RG42 4EX Tel: (01344) 300200 (Main switchboard)

Exhibitors notes

Cerilica Limited (Stand 40)
Following this year's largest RISC OS software release, Cerilica will be both demonstrating and selling Cerilica Vantage — RISC OS' premier professional design and publishing package.

Accompanying this key product will be the ever-popular RiScript which allows for the creation and viewing of PDF and PostScript files. Joining these are some new additions to Cerilica's product line giving visitors to the show a first view.

Electronic Font Foundry (Stand 28)
The Electronic Font Foundry develops and sell fonts for RISC OS, Mac and Windows. We have fonts for many languages of the world as well as Symbolic, Pi and mathematical/scientific fonts.

Surftec Ltd (Stand 30)
Surftec are please to return this year to launch our long awaited SmartMedia parallel reader product for RISC OS systems, as well as continued sales and support of our CompactFlash version of DigiFlash.

Educational RISC OS users will be able to try out our latest Network Computer Thin-Client solutions, including a fully working CITRIX installation, our latest web mail software running from our NetManager server solution.

We will also be using this event to reduce our stock levels of some older Acorn equipment, visit early to take advantage of our give-away prices. FREE Internal Modem to all purchases over £100, while stocks last!

RISCOS Ltd (Stand 14)
RISCOS Ltd will be exhibiting the latest version of RISC OS, which is being released under the RISC OS Select Scheme. RISC OS 4 upgrades will be on sale, and you can join the RISC OS Foundation.

R-Comp/R-Comp Interactive (Stand 15)
Come and see brand new versions of HTMLEdit Studio (featuring much enhanced JavaScript and font support, validation, HTML 4.01 support etc.) and WebsterXL, as well as a new Server version of Messenger Pro (ideal for home networks). R-Comp products are regularly updated — see them in their latest form. RCI will be demonstrating some exciting new sound/music developments, as well as our range of network-related products. The latest games will also be on display including the anticipated multiplayer version of Descent 2.

See you there! END

Give me the

John Ryan explains everything you need to know about e-commerce

Unless you have been living the life of a hermit for the last few years, you have heard about e-commerce you might even have tried it with that little bit of trepidation. It's something that's been all over the news what with dot.com crashes and predicted stock market meltdowns.

So where do you hear about it?

• You get blasted by TV and radio ads;

• News hype (and anti-hype) around e-commerce companies;

• Huge valuations of Web-based companies that get on to the stock market, even when they don't make a profit;

• Or you, as mentioned, have tried it.

So what's it all about?

Commerce is the exchanging or trading of commodities on a large scale usually for money. It is all around us, getting this magazine into your hands involved commerce at all sorts of levels not just the simple case of you handing over your money. We had to pay the printer, who also bought the paper and the ink. Then there are all the suppliers that we deal with and the people who advertise in the magazine. It's a complex business.

When you consider the various parts of commerce you can see there are several different types of person involved:

• Buyers: the people with money who want to buy goods or services.

* Sellers: the people who offer goods and services to buyers. These are split into two distinct groups: retailers who sell directly to consumers and wholesalers or distributors who sell to retailers and other businesses. Incidentally, in the magazine retail trade, there actually five different levels from the Publisher down to the Reader.

• Producers: the people who create the products and services that sellers offer to buyers. A producer is always, by necessity, a seller as well while a seller isn't always a producer. The producer might sell the products to wholesalers, retailers or directly to the consumer.

It's not a particularly complex business what you're looking at is simply exchange and value of exchange at various different levels. In each case, at each level, the exchangeable price will go up hopefully with some added value. Though that is not always guaranteed.

When you get down to the actual activities of commerce and commercial transactions, things get slightly more complicated because you are dealing the details. But even these boil down to a specific number of steps.

Whether a company is selling books, consumer products, information in the form of reports and papers, or services, the same basic elements come into play.

In an e-commerce sales channel you find all of the same elements as well, but they change slightly. You must have the following elements for e-commerce:

• A product;

• A place to sell the product - in the e-commerce case a Web site displays the products in some way and acts as the place even if it is "virtual";

• A way to get people to come to your Web site

• A way to accept orders - normally an on-line form of some sort;

• A way to accept money - normally a merchant account handling credit card payments. This piece requires a secure ordering page and a connection to a bank. Or you may use more traditional billing techniques either on-line or through the mail.

• A fulfilment facility to send products to customers. In the case of software, information and what you might call "soft products" fulfilment can occur over the Web through a file download mechanism.

• A way to accept returns

• A way to handle guarantee claims if necessary

• A way to provide customer service (often through e-mail, on-line forms, on-line knowledge bases and FAQs, and so on.)

In addition, there is often a strong desire to integrate other business functions or practices into the e-commerce offering. An extremely simple example — you might want to be able to show the customer the exact status of an order.

There is a huge amount of hype that surrounds e-commerce. Given the similarities with mail order commerce, you may be wondering why the hype is so common.

There has been a frantic rush by companies, both large and small, to get on to the Web. Does this really make any sense? What can



virtual money

possibly justify a small business making a big expenditure on an e-commerce facility? What is driving this sort of frenzy? To understand it a bit, let's take a look at one of the most successful e-commerce companies: Dell.

Dell is a perfectly ordinary company that, like many others, sells custom-configured PCs to consumers and businesses. Dell started out as a simple mail-order company that advertised in the back of magazines and sold their computers over the phone. Dell's e-commerce presence is widely publicised these days because Dell is able to sell so much merchandise over the Web — something like $14,000,000 in equipment every day, of which 25 per cent is over the Web.



But is this really important? At all? Dell has been selling computers by mail-order over ten years. Mail order sales is a standard way of doing things that has been around for over a century. So if a quarter of Dell's sales is over the Web instead of the phone, is that so important? Perhaps, for three good reasons:

• If Dell has lost 25 per cent of its phone sales to achieve the Web sales, e-commerce does not have any clear advantage. Unless the Web sales cost the company less (for example, because the company does not have to hire someone to answer the phone)? Or what if people buying over the Web tend to buy more accessories? Under these circumstances clearly it is an advantage.

• Then again what if Dell lost no sales through its traditional phone channel but still got the increased Web sales? In this instance you are looking at the possibility that there is a group of people that prefer to buy over the Web — perhaps they went into shops previously, and can see some advantage perhaps in being able to compare prices rapidly in the Web environment. In building its Web site to attract these buyers, Dell may be able to lure away customers from other vendors who do not offer such a service.

• Then there is brand-loyalty and customer service. If you can keep your customer by providing good initial service and excellent follow-up services then it is much easier to keep him than it is to try to attract new customers. So if you can build brand loyalty for a web site early, it gives you an advantage over other vendors who try to enter the market later. Dell implemented its Web site very early, and that presumably gives it an advantage over the competition.

The desperate rush to be online could very easily be the fear of losing out to this big new thing. You don't have to be the best you just have to be the first. There is another potential factor which is that a company is judged by its Web site but that in itself gives no indication as to the size of the company. A two-man company can look as big as a one with 200 employees.

Lure of e-commerce

So what could be the things that lure people to e-commerce?

• Lower transaction costs: if an e-commerce site is put together well, the Web can lower both order-taking costs up front and customer service costs after the sale;

• Larger purchases per transaction: Amazon, for example, offers a feature that no bookstore offers. When you read the description of a book, you also can see "what other people who ordered this book also purchased". That is, you can see the related books that people are actually buying. Which may encourage them to buy more this "trip".

• Integration into the business cycle: A Web site that is well-integrated into the business cycle can offer customers more information than previously available. Companies can track each product through the manufacturing and shipping process, customers can see exactly where their order is at any time. This is what FedEx did when they introduced on-line package tracking — FedEx made far more information available to the customer.

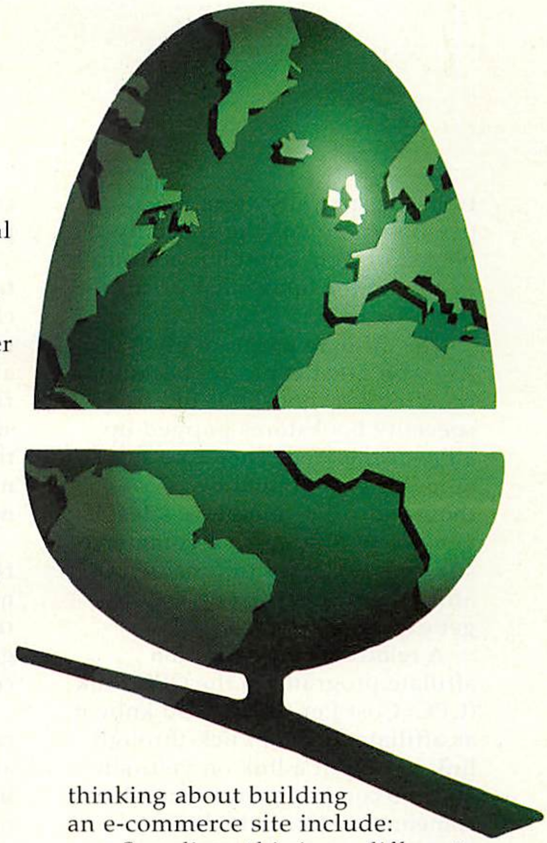
• People can shop in different ways. Traditional mail order companies introduced the concept of shopping from home in your pajamas, and e-commerce offers this same luxury. New features that Web sites offer include:

• Build an order over several days

• Configure products and see actual prices

• Build complicated custom orders

• Compare prices between easily



• Search large catalogues easily

• Larger catalogues: A company can build a catalogue on the Web that would never fit through an ordinary postbox. Amazon sells 3,000,000 titles.

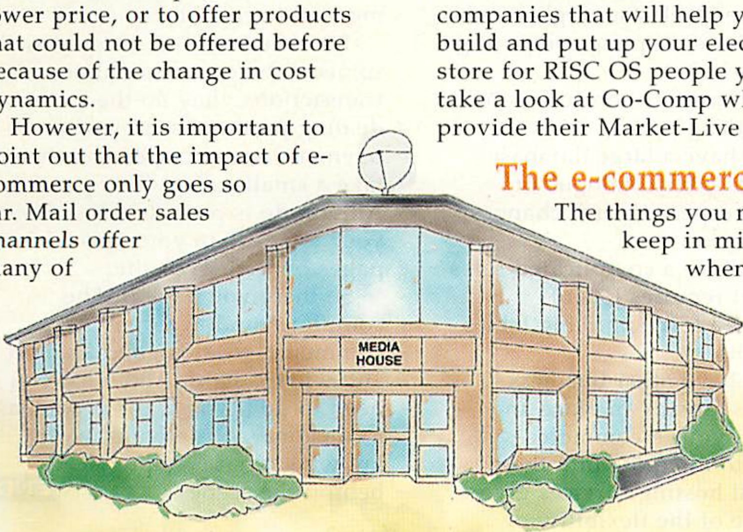
• Improved customer interactions: With automated tools it is possible to interact with a customer in richer ways at virtually no cost. For example, the customer might get an e-mail when the order is confirmed, when the order is shipped and after the order arrives. A happy customer is more likely to purchase something else from the company.

It is these sorts of advantages that create the buzz that surrounds e-commerce.

There is one final point for e-commerce that needs to be made. E-commerce allows people to create completely new business models. For a mail order company there is a high cost in printing and sending catalogues that often end up in the trash. There is also a high cost in staffing the order-taking department that answers the phone.

In e-commerce both the catalogue distribution cost and the order taking cost fall toward zero. That means that it may be possible to offer products at a lower price, or to offer products that could not be offered before because of the change in cost dynamics.

However, it is important to point out that the impact of e-commerce only goes so far. Mail order sales channels offer many of these same advantages, but you still have shops. Shops have social and entertainment aspects that attract people, and you can touch the product and take delivery instantly. E-commerce cannot offer any of these features.



The things that are difficult about e-commerce include:

• Getting traffic to come to your Web site;

• Getting people to come back to your Web site a second time;

• Differentiating yourself from the competition

• Getting people to buy something. Having them look at your site is one thing. Getting them to actually type in their credit card number is another altogether.

• Integrating an e-commerce Web site with existing business data.

There are so many Web sites, and it is so easy to create a new e-commerce web site, that getting people to look at yours is the biggest problem.

The things that are easy about e-commerce, especially for small businesses and individuals, include:

• Creating the Web site

• Taking the orders

• Accepting payment

There are innumerable companies that will help you build and put up your electronic store for RISC OS people you can take a look at Co-Comp who provide their Market-Live system.

The e-commerce site

The things you need to keep in mind when thinking about building an e-commerce site include:

• Suppliers: this is no different from the concern that any normal store or mail order company has. Without good suppliers you cannot offer products.

• Your price point: a big part of e-commerce is the fact that price comparisons are extremely easy for the consumer.

• Customer relations: E-commerce offers a variety of different ways to relate to your customer. E-mail, FAQs, knowledge bases, forums, chat rooms... Integrating these features into your e-commerce offering helps you differentiate yourself from the competition.

• The back end: fulfilment, returns, customer service. These services make or break any retail establishment. They define, in a big way, your relationship with your customer.

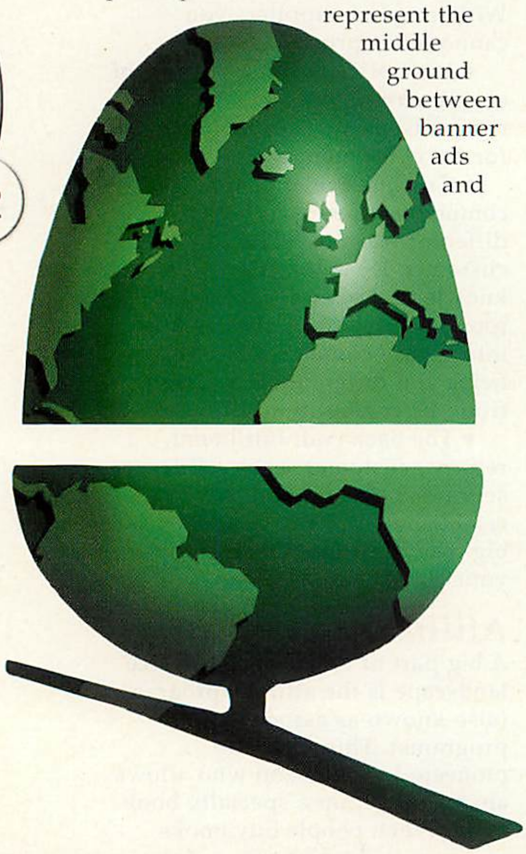
Affiliate programs

A big part of today's e-commerce landscape is the affiliate program (also known as associate programs). This area was pioneered by Amazon who allows anyone to set up a specialty book store. When people buy books

from the specialty store, the person who owns the specialty bookstore gets a commission (up to 15% of the book's list price) from Amazon.

The affiliate program gives Amazon great exposure because hundreds of thousands of specialty bookstores popped up all over the Web. Therefore this model is now copied by thousands of e-commerce sites. If you are setting up an e-commerce site you will want to consider an affiliate program as one way to get exposure.

A relatively new twist on affiliate programs is the CPC Link (CPC=Cost Per Click), also known as affiliate links or click-through links. You put a link on your site and the company pays you when someone clicks on the link. A typical payment ranges from somewhere between two and ten pence per click. Affiliate links represent the middle ground between banner ads and



commission-based affiliate programs.

With banner ads, the advertiser takes all the risk — if no one clicks the advertiser wastes money. Commission-based affiliate programs place all the risk on the Web site. If the Web site sends a bunch of people to the affiliate e-commerce site but no one buys anything, then it has no value for the Web site.

In CPC links, both sides share risks and rewards equally. You may want to consider setting up this sort of affiliate program to gain exposure for your e-commerce site.

Supposing you would like to create an e-commerce site. There are three general ways to implement the site with all sorts of variations in between. The three general ways are:

- Enterprise computing
- Virtual hosting services
- Simplified e-commerce

These are in order of decreasing flexibility and increasing simplicity.

Enterprise computing means that you purchase hardware and software and hire a staff of developers to create your e-commerce Web site. Amazon, Dell and all of the other big players participate in e-commerce at the enterprise level. You might need to consider enterprise computing solutions if:

- You have millions of visitors per month;
- You have a large database that holds your catalogue of products especially if it changes constantly;
- You have a complicated sales cycle that requires lots of customized forms, pricing tables and so on;
- You have other business processes already in place and you want your e-commerce offering to integrate into them;

Virtual hosting services give you some of the flexibility of enterprise computing, but what you get depends on the vendor. In general the vendor maintains the equipment and software and sells them in standardized packages.

Part of the package includes security, and almost always a merchant account is also an option. Database access is sometimes a part of the package. But you provide the Web designers and developers to create and maintain your site.

Simplified e-commerce is what most small businesses and individuals are using to get into e-commerce. In this option the vendor provides a simplified system for creating your store. The system usually involves a set of forms that you fill out online. The vendor's software generates all of the Web pages for the store for you.

There is one more type which has recently come in which is where a single company provides all the e-commerce transactions for you. This is normally used where an individual was written a small program they want to sell over the Web.

Obviously they don't want t invest huge amounts of money in Web site e-commerce development. Nor do they want to mess around with getting a merchant account.

The offering is an account with someone who can do online transactions, they do the money dealing part and send you a payment, say once per month, and take a small cut for their profit. All you do is provide a link from your Web site to your special pages on their Web site.

So there you have it. The complete rundown on e-commerce, what is good about it and what is hard. And what you need to do if you want it. And, as a consumer, it is always worth knowing what is going on behind the scenes. END

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FUJI Finepix 2400	£271	£281	£288
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FUJI Finepix 2800	see website	see website	see website
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FUJI Finepix 4800	£448	£458	£465
FUJI Finepix 4900	£548	£558	£565
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Paul at MAUG

John Cartmell reports on interesting developments

The Manchester Acorn User Group (MAUG) held a meeting on the 19th September. Just one of the items on the agenda was a presentation of RISC OS 4+ and the Select Scheme by Paul Middleton. We had intended to present the topic in-house thinking that Paul would be too busy to travel from Cardiff to Manchester but Danny, our youngest member, insisted that we go for the top man and Paul agreed to attend.

There was a full house and added interest because the audience included a good proportion of members who design the hardware and software that the rest of us simply use. This isn't a report of the meeting. It's more like a sketch for a future. There are many bits missing and the whole thing needs colouring in...

Perhaps the more important items that emerged from the meeting between Paul Middleton and MAUG was not the presentation of RISC OS 4+ or the Select Scheme, although that was obviously interesting in itself, but two apparently extraneous concepts, one technical and the other about the whole future of RISC OS.

The technical item was fascinating because there was nearly a meeting of minds. Prior speculation had assumed that the presence of RISCOS Ltd and hardware designers in the same room might not bode well; results belied prior speculation. The opposing camps were 'RISC OS 4+ will be designed to run only on standard RISC OS machines' from Paul Middleton and 'We need a hardware independent OS' from Simtec.

The meeting place that one side finally occupied was that the focal point of the argument, the RISC OS kernel, was being whittled down byte by byte and the admittance that the Psion Notebook was still being regarded as a suitable repository for RISC OS while the opposition accepted that 'hardware independence' might, in practice, mean an Operating System that would run on just two or three hardware configurations outside the standard RISC OS range. CATS was mentioned.

I say that minds nearly met. Paul Middleton continued to insist that hardware independence was not on the horizon and Gavin Simpson shook a plastic container rattling its contents — a Flash ROM. For those in the know this was akin to a ceremonial mace; not a weapon but a reminder of more primitive times.

No matter; we saw the potential. RISC OS can be slimmed down to make its transfer to another platform not only possible — maybe probable? What many of us now want is that transfer to both a notebook and something else that sounds like a small and furry animal but is possibly the future of computing with RISC OS.

All of this is nothing unless the other concept is tackled.

The second concept came as a challenge to Paul Middleton and was deflected as a financially impossible request. It was no such thing. The parry was misplaced. The challenge was spiritual rather than financial in nature. If this seems to be a surprising idea to surface in the midst of discussing technical aspects of computer development it's possibly best noted that it owed nothing to Steven Spielberg and AI.

The concept is simply one of leadership. With the demise of Acorn, and the multiplicity of hardware designers, the charge was that RISC OS Ltd, as the sole OS developer, was the natural home for someone to arbitrate between designers ensuring that standards were agreed and to encourage those working with RISC OS to speak to one another and to the world.

That challenge still lies on the ground.

Paul did accept the need to regularize standards but rejected the role of arbitrator; instead he pronounced a rule of priority. I assume that Simtec's design for a USB interface is on Paul's desk this morning. In the meantime the role of leader remains unfilled. Perhaps, like MAUG, RISC OS can manage as a casual anarchy.

Even in the unlikely case that this can succeed we still need to co-operate to continue to produce some of the best hardware and software around, and we still need to find the means to shout our wares to the world — and chivvy those of us who set our sights too low.

Paul Middleton is MD of RISC OS Ltd

Simtec are the designers behind the RiscStation board and many other excellent designs and Gavin Simpson is one of the family team.

Manchester Acorn User Group meet every third Wednesday at the Metrovick Rugby Club, Finny Bank Road, Sale and is open to anyone interested in RISC OS.

It charges no fees, has no funds and manages without any officers. Its committee would like to organise successful events like this every month.

The author, John Cartmell, is Acorn User's News Editor and handily lives next door to Metrovick Rugby Club. Cognisant that gentle exercise is essential to good health he is a non-playing member of that club. END

More on the ROX

Thomas Leonard on where his RISC OS-like front end to Linux is up to

It has been over a year since I last wrote here about ROX, the RISC OS-like desktop for Linux and Unix machines. ROX combines the stability and flexibility of Unix with the user interface of RISC OS.

Last time I wrote, the Filer was under development and not ready for general use, and there were a few proof-of-concept applications available to demonstrate drag-and-drop. So what has changed since then?

The big news is that, after months of testing, we released the first version for general use last December.

The Filer doesn't just manage Filer windows as it does on RISC OS — it also handles the pinboard and panels (iconbar), so the framework of the interface is done and ready for use.

After making the stable release, we started the new development cycle by adding `thumbnails' (picture files can be shown as miniature versions of themselves) and panel applets — programs like Alarm which run inside the panel.

A solution to support image filing systems is now available in the form of AVFS. Unlike the previous solution, which only worked in the Filer, AVFS works for all applications.

Another important point is that the X Window System (the graphics system on Linux and Unix) finally got support for anti-aliased fonts, although not all applications support it yet.

These two improvements aren't the result of our work, I hasten to add, but they do remove a couple of objections that people had to the platform.

The user base has continued to grow — the Filer has been translated into Dutch, French, German, Hungarian, Italian, Polish and Russian by ROX-Filer users around the world, and the change log lists hundreds of small improvements made by a huge number of individuals — such is the way of things with Linux.

New applications have appeared and old ones have been updated:

- ROX-Session can be used to load applications automatically when you log in, and sets it all up for you;
- Archive creates and extracts archives in various formats (fully drag-and-drop, of course);
- System shows a graph of memory usage like the RISC OS task manager;
- Edit is a simple text editor, with drag-and-drop loading and saving;
- Memo is a floating alarm clock, similar to RoughTime.
- Wallpaper lets you set random backdrops to your desktop (in the Centred, Scaled and Tiled styles).

Although panel applets are a fairly new feature, we already have a calculator, timer, clock, load monitor, free disk space monitor, application launcher, new-mail indicator and more. Many (but not all) of these programs and applets are written in Python, an interpreted language which fills a role similar to that of BASIC in RISC OS. Thanks to its excellent bindings with the graphics system, writing ROX applications and applets is much easier than writing RISC OS GUI programs in BASIC. There are a number of tutorials on the Web site.



There are a selection of "wrapper" applications too, which allow you to load non-ROX programs (like Netscape, the Gimp, and so on) in the same way as ROX ones. A program is available which will build ROX wrappers for GNOME and KDE applications automatically.

One area many people are interested in is office applications. Naturally, you can run non-ROX applications alongside ROX, but they don't support drag-and-drop saving and other ROX features. StarOffice is probably the most promising office suite, but the user interface was an almost complete MS Office clone.

The first steps to making it fit in with ROX would be to split it into separate applications and change to using the Gtk+ toolkit (instead of its own Windows-clone toolkit). Luckily, the GNOME desktop people want exactly the same thing, so we're letting them do the work.

Lyx, the popular word processor for technical documents, is currently being converted to Gtk+ and will then fit in better. Some other authors have begun to support ROX; for example, Xtheater, a program for watching video files, is now supplied as an application directory and supports drag-and-drop.

ROX is being developed under the GPL — the same licence as Linux itself. That means that anyone can use it for free, see how it works and contribute code to the project.

Easy-to-install packages are maintained by various people for the Debian, RedHat and Mandrake Linux distributions, although we currently lack packaged versions for ARM processors.

You can get more information about ROX, download the latest version, or subscribe to the mailing lists at the ROX Web site **http://rox.sourceforge.net**

The filer, showing my home directory (you can assign individual icons to directories to make them easier to spot), some photos (with thumbnails) and my applications directory.

END

Making the most of it

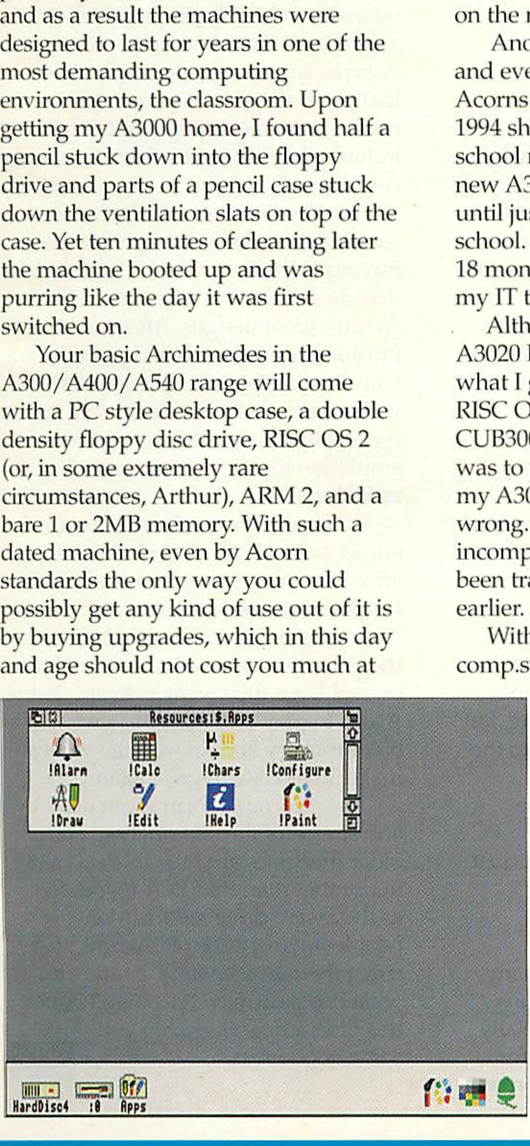
Matthew Price lets you in on his thoughts about older Acorns

This article has been written on an old A3000 using a copy of Publisher, although I have Microsoft Word on my PC, by writing this on the Acorn it is an extremely useful way of showing you what can be done on an old machine.

There have been two events which compelled me to sit down and write this; first my personal experience on making the most out of my A3000 and secondly the sheer number of old Arcs being sold on eBay from both private sellers and schools making the transition to PC clones. I myself acquired my A3000 from my old school.

Acorn built their machines primarily for the education market, and as a result the machines were designed to last for years in one of the most demanding computing environments, the classroom. Upon getting my A3000 home, I found half a pencil stuck down into the floppy drive and parts of a pencil case stuck down the ventilation slats on top of the case. Yet ten minutes of cleaning later the machine booted up and was purring like the day it was first switched on.

Your basic Archimedes in the A300/A400/A540 range will come with a PC style desktop case, a double density floppy disc drive, RISC OS 2 (or, in some extremely rare circumstances, Arthur), ARM 2, and a bare 1 or 2MB memory. With such a dated machine, even by Acorn standards the only way you could possibly get any kind of use out of it is by buying upgrades, which in this day and age should not cost you much at all. Look on eBay (**www.ebay.co.uk**) and search for "acorn", there are even several Acorn newsgroups to post "Wanted" notices.



To upgrade a bare A300 or A3000 I would advise getting hold of RISC OS 3 at the very least, and if you have only 1MB RAM, an extra meg could make all of the difference. Unfortunately only machines such as the A7/5/4000, A3010, A3020 and Risc PCs can support high density disc drives, without serious work, which I won't even risk trying as it involves soldering on the motherboard.

Another good source of upgrades and even spares is to cannibalise other Acorns which are beyond repair. In 1994 shortly before I started secondary school my parents bought me a shiny new A3010, which ironically lasted until just after I'd finished secondary school. I was without an Arc for about 18 months until, after much persistence my IT teacher gave me one.

Although I had been hoping for an A3020 I was not disappointed with what I got. It was an A3000, ARM 2, RISC OS 3 with 2MB RAM and a CUB3000 monitor. The first thing I did was to pry my RISC OS 3 ROMs out of my A3010 just in case something went wrong. The memory was totally incompatible, and my hard drive had been trashed by a friend about a year earlier.

Within a week I'd posted on comp.sys.acorn.hardware asking if anyone had any old 2.5" hard drives and interface cards for sale. For £10 I purchased a 40MB hard drive with a RISC Developments IDE Interface card. If you go to Castle Technologies (the current builder of A7000s and RISC PCs) an interface card would set you back around £30 and an 80MB hard drive around £20, so as you can see although the equipment was old, it was still a bargain.

Several years ago in *Acorn User* there was an article written by an IT co-ordinator at a secondary school on how to upgrade your basic A3000 to become suitable and competitive in a learning environment, in my opinion for nostalgic users, first timers or just retro-gamers the following is an absolute minimum for any machine below the spec of an A5000: RISC OS 3, 2MB RAM and a hard drive of at least 80MB, unless you are planning to create a network, instead you can get cheap second hand etherNet cards for around £20 (also see Paul Vigays networking guide at **www.vigay.com**).

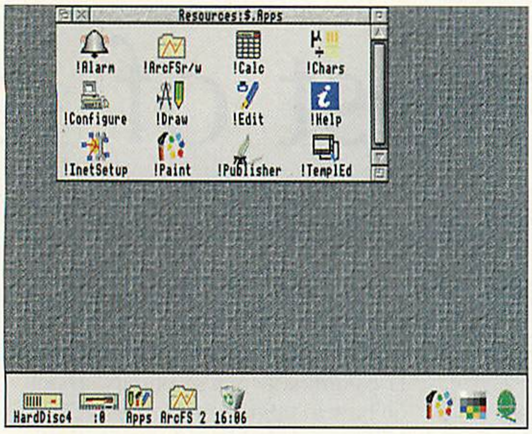
Once the hardware is sorted, what can you do for software? Well for starters download Acorn's Universal Boot structure, now available in the FTP archives at RISCOS Ltd. (**www.riscos.com**), this has been designed to run on any Acorn with a hard drive (5MB space) and RISC OS 3.10+ (but not RISC OS 4).

The *!Boot* sequence will use up more memory than booting without it, but you do get benefits from it. The most obvious are the visual improvements, the *!Boot* sequence comes with the enhanced tool sprites from RISC OS 3.5 and a newer, soft-loaded (that is, it is a module file loaded into memory from disc) version of the WindowManager.

There is also the random wallpaper generator ripped from Acorn's *NewLook* application from several years ago. Finally newer Templates are included, these are also from RISC OS 3,5+, such as the new Error Message window, info boxes and disc operation windows.

I won't go into much depth about the inner or "under the bonnet" improvements having the *!Boot* loaded do, but there are several nice features it brings. First you have the "Hook" directories (shift double-click !Boot) with staple ROM applications (*Edit*, *Paint* and so on) from later versions of RISC OS, although I would not recommend using them.

The *Paint*, *Edit*, *Chars*, *Alarm*, *Squash*



and *Draw* I use are from RISC OS 3.5, they take up more memory, but obviously have neater features. Secondly *System*, *Scrap* and *Fonts* are inside Boot instead of being unsightly icons on your hard drives root directory.

You also get the *Inet* configuration application allowing you to connect your old Arc to a PC using TC/IP protocols. Finally, something which I find really neat is the ability to place applications inside Resources:$.Apps (the ROM Apps folder). This is useful for placing your most commonly used apps at a convenient place, although putting the actual application in there is unwise, several applications have the ability to create shortcuts to programs (such as in Windows), one being my own *ShortCut* (as featured in *Acorn User* August 2001).

Out there, on the large resource sites for Acorn software (one of the best being Paul Vigays links database at **www.riscos.org/links**), many freeware programs are around to make your life with your old Arc easier. Below some of the best are listed and briefly described.

Split (Adam Hamilton)

This program can run on any number of platforms, including a DOS based PC, RISC OS and UNIX. Simply this program will split a single file into smaller chunks for transfer via floppy. Because of its multi-platform design you can split a file on a PC and reassemble it on your Arc. You can also choose the density of your disc or even customise the chunk sizes further.

Available from: **www.blastzone.demon.co.uk/ software.html**

StrongHelp (Christian Ludlam)

Fast becoming the favourite application help system, and includes many manuals for Acorns, such as a cut down version of the PRMs and ARM Assembler. This is a hypertext based system, much like a Web page links from page to page are established. Get it, as you will need it at some point along the way.

Available from: **http://sudden.recoil.org/stronghelp**

VZap (Paul Vigay)

VZap is a shareware virus killer. As shareware you can use it unrestricted, but you are required to register if you intend to run it for a prolonged period of time. *VZap* is simply the best non-subscription virus killer around. Although there are few new viruses appearing for the Acorn, there are hundreds already out there, especially Icon and Extend, which are in many archives obtained from FTP servers.

Available from: **www.vigay.com**

VProtect (Pineapple Software)

This is a smaller freeware module, best included in your boot sequence, when loaded if it detects a virus in an application you will be notified, and the application will be frozen from interacting with the system, such in the case of the icon virus, the infected application will not Filer_Boot. The *VProtect* module does not remove viruses.

Available from: **www.pineaple.demon.co.uk**

ZipEE (John Pettigrew)

This useful app will create and extract PC Zip files. Simple as that, its freeware and extremely useful for extracting files from PC archives.

Available from: **www.xl-cambridge.demon.co.uk/riscos/zipee.html**

Commercial software is available, such as SparkFS from Dave Pilling, but for the casual retro user I'd stick to the freeware. There are also many specialist packages around for the Acorn, but again I'd rather use my PC than stretch my A3000 to its limits just to type a letter.

And finally

Finally for games. There are so many games, both native and conversions out there. Some are still commercially available, some are freeware but for your best bet running an old Acorn is once to check out eBay or post to the newsgroups (**comp.sys.acorn.games**) there are a lot of people out there willing to sell, I found a low density copy of *Flashback* (I have the high density discs but could not use them!) for about £5, no box or manual, but I already have them.

A large proportion of games for the Acorn, especially the old Amiga conversions such as *Cannon Fodder* or even the PC game *Wolfenstein 3D* were designed to run on older Acorn machines, as the Risc PCs were just coming out, so you are bound to find many games to play. Just remember 1MB may be enough to run some games, but not enough for others.

A final thought about people using old Acorns: a while ago on a newsgroup someone took great offensive to people posting their asking questions relating to older Acorns, and commented on how in that person's opinion people like myself were damaging the RISC OS industry by sticking to older computers.

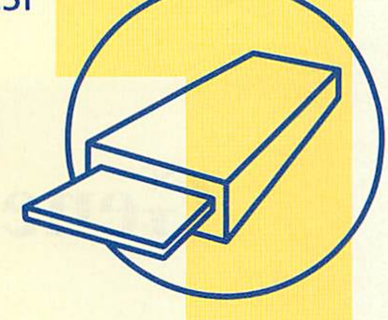
I totally disagree with that as the simple fact that so many people are buying old Acorns which after even a decade still work is a testament to Acorn's great designs. After just finishing my A-Levels and going to University in September, my A3000 will stay home, but not forgotten especially through the use of Acorn emulation for the PC (**www.red-squirrel.org**).

As a poor student I just cannot afford a new Acorn, I cannot even afford to upgrade my two year old PC! People who use Acorns are not damaging the industry simply because they are not interested in a new Acorn, by and large they want a cheap, usable Acorn to play around with, and with a bit of trickery and knowledge you can make an old Acorn great again.

The Acorn platform is not dead by any stretch of the imagination, and older machines are probably still more in number than Risc PCs, for schools as they were designed for. Many people buying these old Acorns after using them in school have little idea of what can be achieved from it, I hope this little article has given you some good ideas. END

Yamaha 4416 SCSI CD Re-Writer

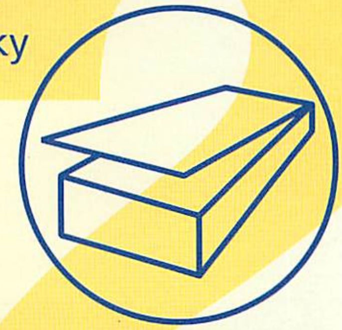
First prize is the excellent Yahama 4416 SCSI CD Re-Writer drive, we have one to give away to the lucky winner!



- 4x Write Speed
- 4x Re-Write Speed
- 16x Read
- Requires Acorn compatible SCSI card
- Requires CDBurn or equivalent software
- Internal drive, requires spare 5.25" bay

Epson GT-7000 SCSI Scanner

Second and Third prizes, the Epson GT-7000 SCSI scanner, we have one each for two lucky readers!



- 600 x 1200dpi
- 36-bit colour
- maximum 9600dpi resolution
- optional film adapter
- Requires Acorn Twain drivers
- Requires Acorn compatible SCSI card

To enter the competition just answer the following question: Which company manufactures the software on the cover of this month's magazine? (a) RISCOS Ltd (b) RiscStation (c) R-Comp

Sponsored by:

Surftec
Internet Computer Solutions

http://www.surftec.net/

YES! I would like to be entered for this competition:

The company that manufactures the software is: a b c (circle one option)

Name: ....

Address: ....

.... Post code .... Country ....

Tel: .... E-mail ....

I would also like an additional discount 8-issue subscription to Acorn User magazine:

UK £25 ☐ Europe £30 ☐ World £35 ☐

Card number ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ Expiry date ___/___

Your name as shown on card ....

Science allsorts

Pam Turnbull looks at a new resource bank for Primary Science from Clic Education

Not yet in its final version, this is a collection of resource screens which can be accessed by the *Textease* and *My World* applications and will work across platforms. Available as individual packs or as collections they simply load into *Textease* or *My World* and use the facilities of these two applications.

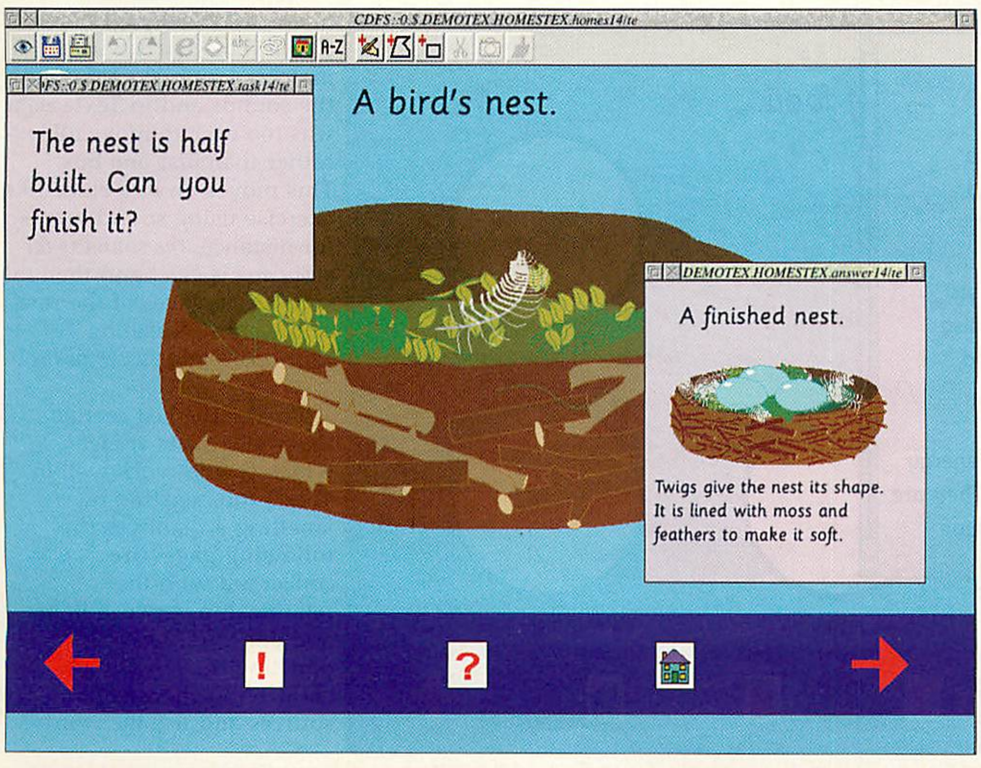
As you'd expect these closely mirror both the National Curriculum and QCA Schemes of work for Science. How you use these resources is totally up to you, my first thought was as assessment and there are some nice crossovers with Literacy and ICT.

So what can you get for your money? At present Key Stage 1 scientists can choose from: Homes and Houses, Life Processes, and Physical Processes, with more in the pipeline.

Textease vs My World

All screens follow the same format which makes a simple learning curve for teachers and students. So *Textease* users will see screens created in Junior style - with nine buttons accessible allowing for saving, printing, undo/redo, effects, looks, words, talk and zoom. Each opening screen provides a range of buttons giving you access to the topics.

Once you've made your choice you find yourself on a screen with software speech and 'Mary's' voice giving information on the task or providing the answers you need. Speech is an important element so look out for the speech icon which will often give advice on how to use the program. You can change software speech with real speech but remember that this requires more memory.



Once you've chosen the area and topic you want the on-screen icons allow you to turn forward or back, return to the home/main menu screen, of the other two the ! tells you the task, and ? provides the answer.

The *Textease* Word Bank are used especially effectively and are vital to the working of these programs. At the time of going to press there were some problems with these but hopefully these will be cleared up soon with Softease and Clic working together on it. To access them just left click on the word bank icon and you'll find words and pictures. Right click to hear the words, left click to place it on the screen.

Any *Textease* user will find the resources obvious to access with the ability to

scale graphics by the normal methods of selecting one of the red corner squares and dragging the graphic to the desired size. Graphics can also be rotated, this time by grabbing the green handle - or pressing R on the keyboard with Shift+R rotating anticlockwise.

My World 2 and 3 are supported and for Acorn users this means using Mode 15 and 256 colours. There are different buttons/icons with one button for words and labels, arrows provide access to the next and previous screens which another pair of arrows make objects smaller or larger.

Buttons also appear at times if there is further information to be had while another button allows you to flip items. Very easy to use and children don't get confused by the resizing and moving boxes which appear on some of the *Textease* screens. For younger Key Stage 1 users *My World* works very well indeed. My preference is for the *Textease* screens but only as long as the Word Bank problems are cleared up.

Key Stage 1 content

All the screens have been put together by Gaynor Perry and while they don't cover all aspects of the National Curriculum as yet what is there is of good quality.

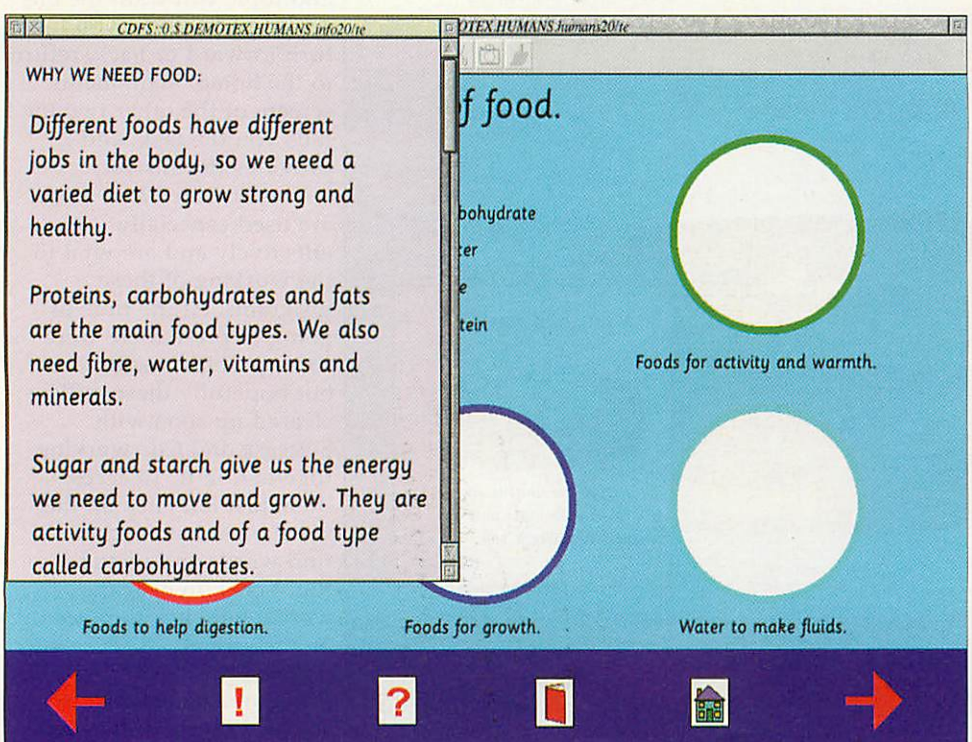
Physical Processes is a collection of 23 screens divided into four sections. You can scroll through the screens consecutively or jump to specific topics such as *Forces and Movement*. The first three screens show - with captions - the concept of pushing and pulling. Children add labels from the text frames (MW) or word bank (TE). Both programs allow for more screens and modifications to be made by teacher or pupil.

This then moves on to changing shape and how bread dough can be pushed and pulled and can be used as an introduction to a class activity, especially if you benefit from an interactive white board.

From there you move on to a screen using a range of traffic lights to introduce words about changing direction and movement, before a screen looks at movement in animals and a final one allows children to group words and phrases about movement and categories.

Next comes *Electricity* which begins with taking a torch apart and then putting it back together. A button allows children to see the effect of switching a torch on and off. Although the children enjoyed this on the computer, I feel that using a real torch would be preferable. The next screen is a simple sorting activity deciding whether an item needs battery or mains power.

The section concludes with completing a circuit diagram and a series of screens to test circuit knowledge by finding the best fit sentence for what is wrong with the five circuits before you. I liked the hotspots and further information available here.



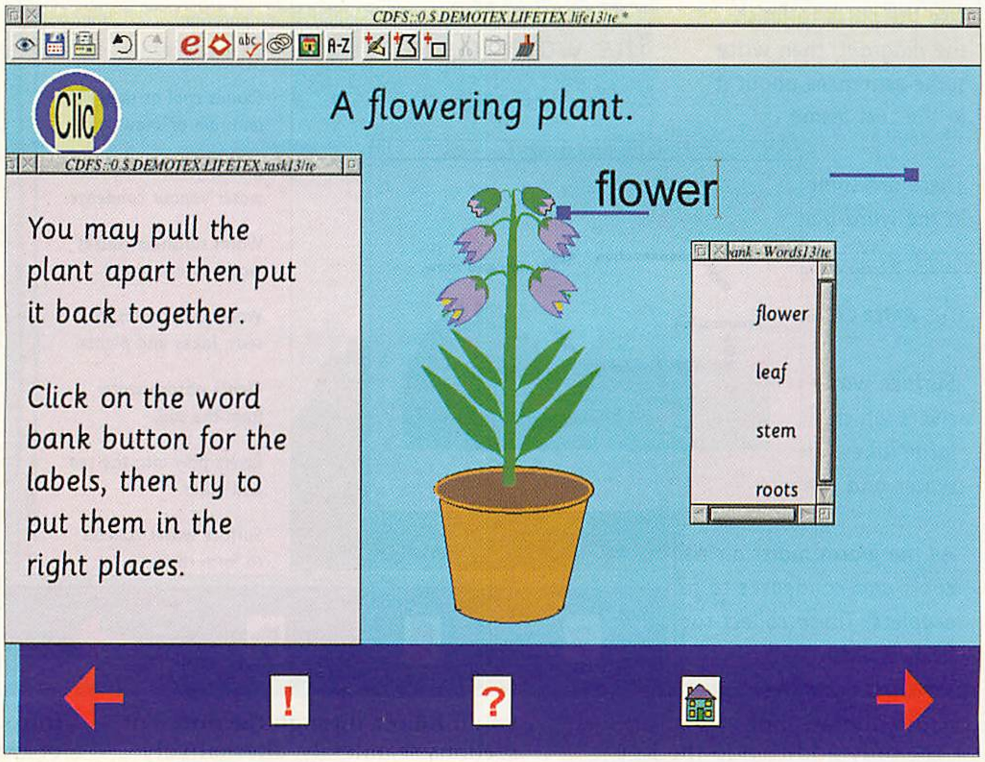
An ear and bell icon opens to reveal pages on *Sound*. This starts with matching animal names with the sounds and in Textease it was too easy to move all rather than just one box. This moves on to a cloze-like exercise using sound words, for instance, *the sound is far away and is quiet* and then to simple sentences of the role of the ear to finishing captions *sound passes to the ....*

Finally the last section looks at *Sources of Light* which would work well in Year 3 too. Starting by labelling six sources the following pages are concerned with the relationship between light and dark. In *My World* a panel on the left allows children to choose light sources and use the words

provided to label them.

Textease uses the word bank to put the right picture and label or sentence into a frame. I used this screen by printing these out and creating a version of pelmanism. The pages then move on to looking at the position of the sun and how it changes through the day and how shadows are formed.

Look at the picture of the tree and shadow and add the correct caption. I found that fact that you can dip into these very useful and that different levels of labelling and sentence making is possible allows for easy differentiating.



Life Processes contains 17 screens and asks children to name the main parts of the body and a flowering plant before ordering the life cycle of a frog and a flower. Children are also asked to sort living organisms according to where they live. I found the naming body parts screens worked well as a resource for ICT Unit 2a - where Year 2 children are getting to grips with word processed text.

As with all the packages, Gaynor Perry wrote Homes and Houses which relates to scientific enquiry and materials and their properties over 21 screens. Moving through these children will find out how to build a wall and roof before looking at the properties needed by different parts of a house.

My testers found this great fun working out who lived in the different types of houses and matching objects to where you'd find them in a house, adding your own words or using the ones provided to construct descriptions. This more or less flows into animals homes and habitats including completing a nest.

Attached, but a little out of place, are the sections on *Grouping Materials* and *Enquiry*. In the latter children are asked to order a soil sorting and waterproof testing experiments, as well as being presented with 10 questions scientists should be asking such as 'what is my question/what will I record?' which would be a different way of introducing experiments to the classroom, choosing a different one for each experiment.

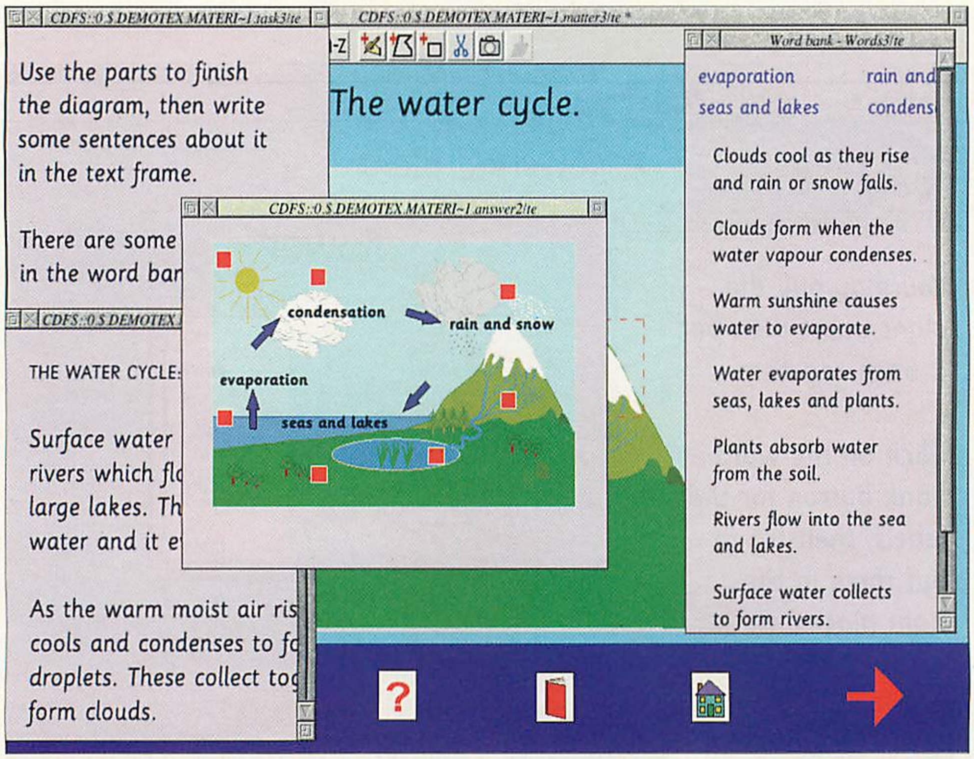
The soil work would be appropriate for Year 3 too as would the predicting properties screens in Grouping Materials. Yet these could be useful for supporting classroom experiments and making children think more about basic enquiry skills.

Key Stage 2 content

Older Key Stage 2 children can access: Forces and Motion - 39 screens on magnetism, gravity and friction, balanced/unbalanced forces, springs, air resistance, light sources, the eye, ear and sound and finally the sun, shadows and phases of the moon; Living Things in their Environment - 28 screens on the seven life processes, importance of light to green plants, habitat, keys, food chains and webs, and microorganisms.

Electricity and Power - 37 screens covering dangers, circuits, switches, plugs, fossil fuels, hydroelectricity, nuclear, geothermal, solar, tidal and wind energy; Materials and their Properties - here there are 18 screens on states of matters, water cycle, soil profiles, rocks as well as experiment support for work on properties of materials, separating materials, solubility and changeable reactions.

And finally Humans as Organisms - 27 screens naming body parts, looking at teeth, muscles, differences between men and women with no diagrams of sex organs or references to their structure, how a baby grows in the womb, food and diet, effects of



tobacco and alcohol.

The only addition to the Key Stage 2 screens in format being the Reference Book which allows children to access information which they can use for the activities or to build or reinforce their own knowledge and use of scientific language. Many of the Key Stage 2 packs include a final blank screen for pupils to use the words and graphics to create their own mindmaps, charts or posters. These packs don't try to cover the entire syllabus, but rather to give teachers another delivery and reference tool.
Taking Green Plants as Organisms as an example, there are only 15 screens in total divided into seven areas - one hidden underneath the title box. This presents a colourful screen of the parts of a flowering plant. You can drag these into position and then label them before matching the parts and jobs they do.

Unsure of what they do? Then click for further information (MW) or look in the reference book icon (TE). Click on the next arrow and you'll follow through the different sections seamlessly, alternatively return to the main menu and access specific sections via their icon.

Flowering Plants presents an ordering activity where you must reconstruct a plant before matching the jobs each part does. One idea is to make this into a revision poster. Next up is *How Plants Make Food* where arrows and captions are added to pictures of trees to show what they need and what is made taking you to photosynthesis and then inside a leaf asking all the time what is needed and what is made.

Confused pupils can clarify the facts by clicking on the reference book. The leaf icon on the main page takes you to *The Role of the Leaf* where hotspots on a graphic of a leaf provides information which can then be turned into an information poster.

Life Cycle follows with ordering of the different stages of a plant's life and activities on pollination, seed production, dispersal and germination being a mixture of ordering and labelling accurately. A key icon takes you to *Identifying Leaves*. By providing simple clues *Is it made up of leaflets?* you must name five common trees. If you're not sure what a leaflet is extra information is provided to help.

The final section deals with *Transport in Plants* which again is a fact sheet waiting to be put together from the facts and graphics available as well as revision exercise matching the results of a cress growing experiment to the conditions in which is was grown. All good stuff but with the odd page which doesn't seem to fit - such as this cress experiment. Yet this is a useful item which I'd rather have than not.

How you use these pages is totally up to you - introductions, assessment, revision or extension activities. Clic make the point that these resources include challenge for the more gifted or able with elements of the Year 3 curriculum in the Key Stage 1 items and selected material from the Key Stage 3 syllabus included in the Key Stage 2 product and I hope to see more of them - especially related specifically to the problem areas that children have with Key Stage 2 SATs papers. **END**

Product details

Product:	Science Series
Ages:	5+
Price:	£30 (individual packs), Starting Science for Key Stage 1 (£70), More Science for Key Stage 2 (£160)
Supplier:	Clic Education, Glynn Cottage, Nant Y Garth, Y Felinheli, Gwynedd LL56 4QB
Tel:	+44 (0) 1248 671093
Web:	www.clicsoft.co.uk
E-mail:	sales@clicsoft.co.uk

RISC OS Rambles

Mike Cook buys another round for RISC OS users

Well it's been a bit traumatic at Cook Towers this last month, not least of which was the passing of the big Five Zero in terms of birthdays. The day brought me presents that consisted entirely of bottles of brandy, does this say something about how people see me?

However, I chose to totally ignore this event apart from it being an excuse to get a Handspring Visor PDA. I find it has an IR capability so maybe it won't be too long before it is talking to my RISC OS kit. Currently it only has a USB cradle but there are serial ones available.

That brings me to the point of a USB card for RISC OS machines, I have maintained that one has been needed for sometime. I see on one of the newsgroups that there is someone developing one but they don't want to fall into the trap of announcing it prematurely. This is good news but us RISC OS users are used to not holding our collective breath.

On a totally unrelated tack, I went to see the Space Centre in Leicester and I was most impressed, check out their Web site at **www.nssc.co.uk** it's well worth a visit and allow at least three hours.

It's always good to get some feedback, Barigye Maurice writes:

I **"Remember me? Well I asked you for some advice some time back about a clock system. I wish to inform you that I finished my project albeit with one digit instead of four (I only managed to obtain one counter-decoder set). But all the same I constructed the clock system and presented it to my lecturers who were impressed. I just wanted to thank you so much you for all your help and to wish you the best in your work."**

And yet more feedback from Tony Moore, a Chartered Engineer, from Accra, Ghana who has been playing with monitors:

Q **"On 13th October 2000 you replied to my e-mail of the same day asking what monitors I could use with an A3000. I eventually bought a new AFK52 multiscan monitor from CTA.**

"You said I should change some links to get the sync pulses right, well I have not done this yet because, when I connected the monitor to the A3000, using the lead supplied by CTA, I was surprised to find that there was a display already available. This seems to be explained by Acorn Application Note 247 which says that:

"'...As Acorn monitors, including the multiscanning AKF50, AKF52 and AKF18 will "lock" to a video signal transmitted at TV scan rate, it is only necessary to configure your computer to output a signal at this scan rate and with composite, as opposed to separate horizontal and vertical, sync. This may be done from the command line (press F12) using the commands

```
*CONFIGURE MONITORTYPE 0
*CONFIGURE SYNC 1
```

...'

"Since my A3000 is still set to monitortype=0 and sync=1 following its use with the original AFK12 monitor (now deceased) it seems that I can view non-multiscan modes without further action.

"You said I could configure the modes using *MakeModes* unfortunately this needs RISC OS 3.5 and so will not run on an A3000. I have found that the screen is best filled by a non-multiscan mode number 67 defined by the module 'ExtraModes' (23 Oct 1989) which was distributed many years ago by Computer Concepts, with Impression II, this defines modes 66-67 and 72-95).

"I have some further questions however. If I remove LK_25 and maybe LK_26 and/or LK_27 to enable the A3000 to output multiscan modes, will the display be significantly better? I ask this because I am reluctant to mess around with something which is already usable and also because, after a casual look under the lid, I could not find those links.

"From reading Application Note 254 and the definition files in *MakeModes* it seems that, for various modes on the same monitor, sync_pol may be 0, 1, 2 or 3. Does this mean that for the A3000 it would be necessary to remove and/or replace LK_26 and/or LK_27 to produce the correct sync_pol for a particular mode?

"If so, then this seems like several steps in the wrong direction! As a further complication, the new AKF52 monitor arrived without a manual. This is clearly not needed to turn it on or off, but it might contain information which would avoid me asking you silly questions."

A You don't have to change the links if your monitor and lead work with the TV modes. It is only necessary if your

57

monitor and/or lead do not route the sync pulses properly. So to experiment with the multi-scan modes you only need to type:

```
*CONFIGURE MONITORTYPE 1
```

Remember if this screws things up, power-up holding down the 0 key and then reset this monitor type. I am sure there was a version of *MakeModes* that ran on 3.0, can anyone remember this?

As to different modes requiring different configurations of links I don't believe this is the case, especially not with the Acorn type monitors. It's a pity there was no manual because it would have given you the information you need to type into *MakeModes*.

Philip Draper has been reading my image processing articles and has a question:

Q "This has to do with your article about image processing in the July Acorn User, as well as being a possible rambling topic. In the article you mention 16- and 24-bit grey scale images. I think I came across one of these at work.

"We have a scanner driven by very expensive proprietary software on an Apple system. It can export the images as TIFF files. I experimented with one of these using *ImageFS* and also a good PC bitmap image program (*PaintShop Pro* in its current version).

"The best output I could get was very peculiar. The image should be a series of spots with fuzzy edges (grey to black spots on a white background). Instead I got a confusing pattern of grey scales 'nested' one within the other.

"I interpreted this as meaning that the original TIFF image had a grey scale with more than 8 bits. My two programs only handle 8-bit grey images. So the question is, how, on a Risc PC, say, does one deal with higher order grey scales? Incidentally, I found the image-processing series very intriguing."

A I think your main question about how to handle grey scale images with more than 8 bits would have been solved by the second of my articles. However, it is interesting to note that the human eye can only distinguish between 6 and 7 bits of grey scale resolution. That means between 64 and 127 different levels of grey.

The value of having more is that you have a greater dynamic range especially when you are trying to image things like temperature maps. However, there could be another explanation for your problems namely the byte order of data inside the image. TIFFs can have the most significant or least significant byte first.

A good TIFF reader will be able to sort this out but PC programs do tend to think the whole world is PC and so don't even bother to check the most significant byte first option. The other complication is that the data in a TIFF image may be compressed by a number of different methods or it may be simply bytes of data.

A Macintosh in particular can introduce forms of compression like Quick Time that are unlikely to be read by humble PCs or even Acorns. If your images are not compressed and are multibyte, then RawRead32 should be able to extract them.

Paul Davies has been having trouble with the last CD Rom:

Q "There is a problem with the July CD Rom which I hope you may be able to rectify. I don't have a CD drive for my Acorn but I can normally read and transfer files from my PC.

"The Acorn software isn't so much a problem, but the PC filenames are 'hardwired' in the format 'filename/ext', and not the normal 'filename.ext', so all DOS files (HTML and GIF files), are inaccessible on my PC because of the illegal forward-slash character.

"Do you have any versions which are PC readable that I can have instead? Alternatively do you know of any PC fix to overcome this. I also understood you were going to archive Acorn software to preserve filetypes and names on the PC. Will future CDs adopt this Acorn-only format? I'm using Windows95 issue a; maybe later issues don't have this problem?

"Also I'm guessing here, but maybe the PC company copy the raw CD data stream directly, bypassing the filing system and not realising the problem? But I expect quality control would have picked this up. Actually, its not the only AUCD that has this problem; the 200th issue CD4 also has it almost as bad.

"A quick browse through all of them shows: CD4,6,7,13,14 have slashes; CD2,3,8,9,10,11,12 have dots and aren't a problem; CD1,5 don't have extensions.

"The RISC OS *ARMovie* app on CD5 contains files with a slash in their name but I don't think these are PC extensions. I've just found the article on the making of CD4 (200th) where the author mentions this very problem which is in the Christmas '98 issue on page 33."

A I have been looking at the July CD with the PCs I have at work. My desk machine shows truncated file names with a ~ in them, despite running Windows 95. Also the Wakefield folder shows as empty and many files appear to be missing.

My two engineers with supposed identical systems show the file names with slashes and despite this can read the files on their system. Our IT department don't know why my CD drive behaves like this but it is a long standing problem and I have had many different drivers installed, some seem to cure the problem but only on a temporary basis. Therefore I wouldn't rule out it being a PC problem.

However, there is a lack of consistency with the Acorn User CDs. When different people take on the production of them they tend to use their own kit and software and so, unsurprisingly, they are different. Given the variability of PCs it's not really surprising that things get screwed.

Sorry I don't have a full answer but I will throw this one open to see if any one else has a more complete solution. **END**

Contacting AU

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rambles@acornuser.com

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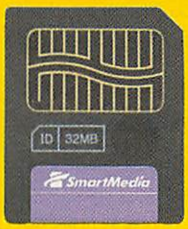


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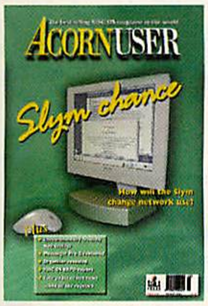
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Issue 236
August 2001

- All about Slym
- Eco-friendly Web
- Messenger Pro review
- Organizer review
- Report on the RISC OS Expo



Issue 235
July 2001

- Vantage review
- Wakefield Show report
- Mike Cook's Graphics suite
- More on User Interfaces



Issue 232
April 2001

- RISC OS graphics round-up
- New Artworks module review
- How to create desktop icons
- What ProCAD can do for you



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Great video – shame about the words

I was delighted to see on the cover of the October issue of Acorn User that inside there was an article on Video and RISCOS. I have an analogue camera at present and am considering moving up to digital and I thought that this article would tell me of the software options available and help me make up my mind.

I am afraid I was rather disappointed. There was a large amount of information on the how the digital formats evolved (interesting but not really relevant to your average user) and hardly anything related to RISC OS other than a passing reference to Optima which, reading between the lines, is a professional package and therefore well out of reach of most amateurs.

I currently use Videodesk with excellent results, and although this is now not available I would have thought it should have featured strongly in an article headlined "everything to do with Video and RISCOS", as it is still relevant to digital cameras. Similarly I would have expected Wild Vision's Chroma Genlock to have been mentioned in the article, although it is not an editor as such and is only available secondhand.

I feel compelled to comment on the graphics which accompanied the article. Is it just me? but I could not find any reference to these drawings and screen shots in the text so I was completely in the dark as to their purpose (padding perhaps).

I apologise if anyone feels I am being over critical but I would have been delighted to have found an informative, relevant, and authoritative piece on Video/RISCOS but this was certainly not it.

John Gray
by e-mail

We're sorry the article did not live up to your expectations. It had intended to be a general interest article because while obviously it is an area of interest currently there is little that can be done with RISC OS systems. The cards you mention are, as you say, no longer produced and nor is the software supported. We were looking for a current view.

That said perhaps with some of the upcoming hardware we can look forward to some interesting new developments in this area.

Who is the best?

Since the announcement of the Omega from MicroDigital, most of the Acorn press seemed to become obsessed with said machine. Many people seem to have forgotten about the other manufacturers.

Recently, *Acorn User* has featured articles on Castle Technology and RiscStation and is showing more balance, which is a good thing.

We must remember that RiscStation and Castle Technology have done much for the market. RiscStation have brought us cheap, affordable machines with built in networking — perfect for businesses and schools. Then we have POSum, an excellent new market for RISC OS machines.

But surely the stars of the RISC OS show are Castle Technology. When Acorn announced they were pulling out of the market, Castle stepped in and gained the rights to manufacture and develop both the A7000+ and the Risc PC.

Not content with merely manufacturing the existing specifications, John Ballance (Technical Director at Castle) and his team of engineers designed the Kinetic card, providing a huge speed boost. The smart things about the Kinetic is that any Risc PC can be upgraded to the latest speeds.

Next up a new browser, putting other RISC OS browsers in the shade. *Oregano2* promises to bring us right up-to-date with modern PC browsers. Finally, we will have a browser that can compete fully with PC browsers. We will have integrated Flash 5 and MPEG playback, plus all the other things we want.

Still not content, Castle then developed the fastest RISC OS computer in the world, the 300Mhz Kinetic Risc PC. This baby really flies. Anyone who hasn't experienced a 300Mhz Kinetic powering a ViewFinder connected to a 21" totally flat iiyama monitor wants to get themselves to the next Castle-attended Acorn show pronto.

People should remember all the good work Castle (and RiscStation) have done for the RISC OS market. This work continues.

Michael Stubbs
by e-mail

It's just too late

I share Ollie Batts' frustration with the late arrival of RISC OS products. As soon as I heard about the Microdigital Omega, I postponed my plans to have my SA Risc PC upgraded to RISC OS 4 and ordered an Omega instead. I was told that there was a chance I would have the computer for Christmas — although I have to admit, no one actually said which year.

I have been waiting nearly a year for the computer and now become very worried every time I download e-mail and watch my hard disc

getting closer and closer to being full. The time is rapidly approaching when I will have to give up waiting for the Omega and go back to my original plan of upgrading my Risc PC to RISC OS 4 and a bigger hard disc.

I wonder how much the RISC OS market has suffered as a result of the Omega? It has suffered as a result of my not having handed over money for an upgrade, but I'm sure I'm not alone. How many computer sales have RiscStation and Castle lost because potential customers have been promised a new and better model 'in four to six weeks time'?

I am standing by the RISC OS market —if I receive official news that the Omega isn't going ahead, I will have my Risc PC upgraded to RISC OS 4 and will wait for someone to produce a computer that matches the Omega. But I wonder how many disillusioned former RISC OS users have left our community for ever? The Omega should have brought people back to RISC OS, not driven them away.

Microdigital haven't updated the news page of their Web site for over a month and do not carry an advert in the last *Acorn User*. I fear the worst, but will be absolutely delighted if they prove me wrong and I have an Omega before the next *Acorn User* arrives.

Mark Syder
by e-mail

Taking the RISC

I decided to return to college this year to enrol on a computer course, so recently I purchased a budget PC. However, just this week I noticed your magazine and had a little read through it. Consequently, I have browsed a few RISC-related sites and I like what I see.

Unfortunately I haven't been able to find any other literature on the RISC OS, which leaves me in quite a predicament. I am quite new to the computing world, so any information would be quite helpful as I would like to change my options and take the Risc

Any information on retailers within Reading or Berkshire would be useful and where I can get Risc-related literature.

Peter Titus
by e-mail

Well as far as Reading is concerned you are in luck, just check out the show guide in this issue for the show on October 20th-21st.

RISC OS dealers are an elite group and as such are not thick on the ground, but check through the magazine adverts particularly Datastore in South London. And good luck — others have made the transition successfully.

Revo-lution

Having thought about the domination of Microsoft over the desktop computer world and the lengths it goes to to oust all competition. It pains me to see that not content with owning 90 per cent of the desktop market and helping to cause the partial demise of our beloved operating system, Microsoft are now attempting to conquer another market with their "phoney" operating system – and that is the PDA market.

We have two RISC OS machines and three Psion palmtops and they are more than adequate for our purposes. It's true that we also have two PCs but one is used only for games and I'm not sur what the othe one is for as it hasn't been used for anything since it came out of the box.

Despite the stability of the two operating systems on the good machines I am worried about what the future has in store.

We have seen Acorn flattened by Microsoft and ARM sold off to Intel. We have seen castle trying to pick up the pieces but now Psion and Acorn are disregarded names in the computer world.

But I think there is a light at the end of the tunnel and it's not a train coming the other way. By educating people about what we represent, trying to raise awareness about the truth of RISC OS that there is an alternative to Windows – they may know that there are alternatives but I don't think they really know what those alternatives are.

Those in charge of the EPOC operating system have plans for the future. Symbian are in charge of the EPOC dream and they consist mainly of mobile phone companies such as Nokia and Motorola, all of whom are helping to develop the system for their own machines.

Nokia have released many phones with built-in EPOC-style PDAs inside, the latest of which is the Nokia 9210 Communicator, which runs the very latest version of EPOC, ER6 and is, I believe, only the second EPOC device to feature a colour screen.

As the Acorn name rose from the ashes and a market which is rather small. to the present day, with the successes of Slym and the solar-powered Solo, so EPOC and Psion can rise from Microsoft's attempts at dominating the whole of global communication.

Tom Crosby
Kent

Interesting letter. I think the only thing I need to say is that ARM was never sold out to Intel. ARM Ltd continues to be a completely independent company and one of the most successful in the world. They only design chips and then licence those designs to anybody that will buy. Intel happen to be one of those companies. In fact it was Intel that agreed to toe the ARM line when it came to the chip design rather than the other way around.

Contacting AU

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